



2007 Tactical Wheeled Vehicles Conference (TWV)
"Sustaining the Current Force-Improving the Future Force"

Monterey, California

4 - 6 February 2007

Agenda

Monday, 5 February 2007

Lieutenant General William E. Mortensen, USA, United States Army Materiel Command, ***"Tactical Wheeled Vehicle, Supporting the Warfighter"***

- Future Tactical Truck System (FTTS) Advance Concept Technology Demonstration (ACTD) (Video)
- Platform Systems Demonstration (PSD) (Video)

Lieutenant General Ann E. Dunwoody, USA, Deputy Chief of Staff, Headquarters, Department of the Army, ***"Sustaining the Current Force & Improving the Future Force"***

- Ice Fishing (Video)
- UNDI (Video)

Lieutenant General Clyde A. Vaughn, USA, Director, Army National Guard Bureau, ***"It takes the ARNG to be ARmy StroNG"***

Major General Alan Bell, USA, Deputy Commanding General, US Army Reserve Command, ***"Preparing the Army Reserve for the Fight"***

Major General Bruce Casella, USA, Commanding General, 63rd Regional Readiness Sustainment Command, ***"Equipping an Operational Army Reserve"***

Lieutenant General Stephen Speakes, USA, Deputy Chief of Staff, G-8, ***"Balancing Modernization and Operational Needs"***

Brigadier General Conant, USMD, Director, Capabilities Development Directorate, Marine Corps Combat Development Command, ***"USMC Ground Mobility"***

Brigadier General Clinton T. Anderson, USA, Commanding General, U.S. Army Security Assistance Command, ***"2007 Tactical Wheeled Vehicle Conference"***

Tuesday, 6 February 2007

Colonel Timothy G. Goddette, USA, Project Manager, Project Management Office, ***"PM Force Projection"***

Colonel John "Steve" Myers, USA, Project Manager, Future Tactical Systems (Provisional); and Lieutenant Colonel Ben Garza (USMC), Project Manager, Joint Light Tactical Vehicle, ***"TWV Transformation Efforts"***

Brigadier General John R. Bartley, USA, Program Executive Officer, Combat Support & Combat Service Support, ***"Program Executive Office for Combat Support & Combat Service Support, NDIA2007 Tactical Wheeled Vehicle (TWV) Conference"***

Major General Roger A. Nadeau, USA Commanding General, US Army Research, Development and Engineering Command (RDECOM), ***"Sustaining the Current-Improving the Future"***

Major General Mike Lenaers, USA, Commanding General, U.S Army Tank-Automotive and Armaments Command (TACOM), ***"Sustaining the Joint Force/Improving the Future Force"***

- Golfer in the Woods (Video)

Brigadier General (P) James E. Chambers, Chief of Transportation, Commanding General/Commandant, U.S. Army Transportation School, ***"The U.S. Army Transportation Corps, TWV Transformation"***

- Evolution of Army Truck (Video)

Mr. James B. Johnson, U.S. Army Developmental Test Command, ***"ATEC Testing in Support of the War"***



2007 Tactical Wheeled Vehicles Conference

The Portola Plaza Hotel & Monterey Conference Center

Event #7530



The Right Product



At The Right Time



From The Right Source



At The Right Price



Sustaining the Joint Force/Improving the Future Force

4-6 FEB 2007

NDIA
2007 Tactical Wheeled Vehicles Conference (TWV)
Event #7530
February 4 - 6, 2007

The Portola Plaza Hotel at Monterey Bay
& Monterey Conference Center
Monterey, California

Wlcome to the 2007 Tactical Wheeled Vehicles Conference.

Objective:

This annual seminar historically has brought the military service, industry, prime contractors, subcontractors and their suppliers together to discuss present and future wheeled vehicle requirements for all services. It has afforded an atmosphere for open discussions between the customers and the suppliers based on the needs of the military users. This is the only conference held specifically for the military's Tactical Wheeled Vehicle community.

The information presented is valuable to program managers, engineers, planners and marketers. In addition, open discussions will be invaluable to DoD planners and program managers. This year's theme is:

"Sustaining the Current Force-Improving the Future Force"

Featured Speakers

Keynote Address

The Honorable Claude M. Bolton, Jr.
Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT))

United States Army Materiel Command (AMC)
General Benjamin S. Griffin, USA
Commanding General, AMC

Office of the Deputy Chief of Staff, Army G-4
Lieutenant General Ann E. Dunwoody, USA
Deputy Chief of Staff, G-4
Headquarters, U.S. Army

United States Army Reserve Command
Major General Alan Bell, USA
Deputy Commander,
United States Army Reserve Command

Congressional Panel
Moderator: Mr. Jay Kimmitt
Executive Vice President, Washington Operations
Oshkosh Truck Corporation

Office of the Deputy Chief of Staff, G-8,
Lieutenant General Stephen M. Speakes, USA
Deputy Chief of Staff, G-8
Headquarters, U.S. Army

United States Marine Corps - Joint Service Efforts
Brigadier General Thomas L. Conant, USMC
Director, Capabilities Development Directorate
Marine Corps Combat Development Command

United States Army National Guard
Lieutenant General Clyde A. Vaughn, USA
Director, Army National Guard, National Guard Bureau

Tactical Wheeled Vehicles (TWV) Modernization
Corporate Board of Directors
Moderator: Brigadier General John R. Bartley, USA
Program Executive Officer, Combat Support & Combat Service
Support (PEO CS&CSS)

The schedule and room assignments contained herein are subject to change.

Cover graphic design by: Mark C. Barbes, PEO CS&CSS

Conference Welcome & Overview

Revised Agenda

Sunday, February 4, 2007

8:00 a.m. - 1:00 p.m. 9th Annual NDIA TWV Golf Scramble (Sold-out)
Black Horse Golf Course, Seaside, California
8:30 a.m. shotgun start

2:30 p.m. - 7:00 p.m. Registration Check-in
The DeAnza Ballroom Foyer
The Portola Plaza Hotel at Monterey Bay

3:00 p.m. - 7:00 p.m. Welcome Reception and Super Bowl Party
The DeAnza Ballroom I and II

Monday, February 5, 2007

7:00 a.m. - 8:00 a.m. Continental Breakfast
Serra Ballroom foyer
The Monterey Conference Center

7:00 a.m. - 5:00 p.m. Registration Check-in Continues
Serra Ballroom foyer
The Monterey Conference Center

8:00 a.m. - 8:10 a.m. Conference Overview & Welcome
Serra Ballroom
The Monterey Conference Center

Mr. Gary Tull
Vice President, Government Operations, AM General Corporation
and Chairman, Tactical Wheeled Vehicle Division, NDIA

8:10 a.m. - 8:15 a.m. NDIA Welcome
Serra Ballroom
The Monterey Conference Center

Lieutenant General Lawrence P. Farrell, USAF (Ret.)
President & CEO
NDIA

8:15 a.m. - 8:45 a.m. Keynote Address
The Honorable Claude M. Bolton, Jr.
Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT))

Session I:

Chairman: Mr. John Stoddart, Executive Vice President and President, Defense, Oshkosh Truck Corporation,
Serra Ballroom
The Monterey Conference Center

8:45 a.m. - 9:15 a.m. United States Army Materiel Command (AMC)
General Benjamin S. Griffin, USA
Commanding General, Army Materiel Command

9:15 a.m. - 9:45 a.m. Office of the Deputy Chief of Staff, Army G-4
Lieutenant General Ann E. Dunwoody, USA
Deputy Chief of Staff, G-4
Headquarters, U.S. Army

9:45 a.m. - 10:15 a.m. United States Army National Guard
Lieutenant General Clyde A. Vaughn, USA
Director, Army National Guard, National Guard Bureau

Monday, February 5, 2007 (continued)

10:15 a.m. - 10:45 a.m.	<p>Coffee Break</p> <p>Serra Ballroom Foyer</p>
10:45 a.m. - 11:15 a.m.	<p>United States Army Reserve Command</p> <p>Major General Alan Bell, USA</p> <p>Deputy Commander,</p> <p>United States Army Reserve Command</p>
11:15 a.m. - 12:15 p.m.	<p>Congressional Panel</p> <p>(Video Teleconference from Washington D.C.)</p> <p>Moderator: Mr. Jay Kimmitt,</p> <p>Executive Vice President, Washington Operations, Oshkosh Truck Corporation</p> <p>Panel Speakers:</p> <p>Mr. Dave Morrison, Staff Director,</p> <p>Defense Subcommittee, House Appropriations Committee</p> <p>Mr. Jesse Tollerson, Staff,</p> <p>House Armed Services Committee</p> <p>Ms. Sid Ashworth, Minority Staff Director,</p> <p>Defense Subcommittee, Senate Appropriations Committee</p> <p>Mr. Bruce Hock, Staff,</p> <p>Senate Armed Services Committee</p>
1215 p.m. - 1:00 p.m.	<p>Lunch</p> <p>The DeAnza Ballroom I & II</p> <p>The Portola Plaza Hotel at Monterey Bay</p>
<p>Session II</p> <p>Chairman: Mr. Jack Reidy, President & CEO, Defense Products Marketing, Inc.</p> <p>Serra Ballroom</p> <p>The Monterey Conference Center</p>	
1:00 p.m. - 1:45 p.m.	<p>Office of the Deputy Chief of Staff, G-8,</p> <p>Headquarters, Department of the Army</p> <p>Lieutenant General Stephen M. Speakes, USA</p> <p>Deputy Chief of Staff, G-8</p> <p>Headquarters, U.S. Army</p>
1:45 p.m. - 2:45 p.m.	<p>Joint IED Defeat Organization (JIEDDO)</p> <p>Dr. Robin Keese</p> <p>Deputy Director</p> <p>Joint IED Defeat Organization</p>
2:45 p.m. - 3:15 p.m.	<p>Coffee Break</p> <p>Serra Ballroom Foyer</p>
3:15 p.m. - 4:00 p.m.	<p>United States Marine Corps - Joint Service Efforts</p> <p>Brigadier General Thomas L. Conant, USMC</p> <p>Director, Capabilities Development Directorate</p> <p>Marine Corps Combat Development Command</p>
4:00 p.m. - 4:30 p.m.	<p>U.S. Army Developmental Test Command (ATEC)</p> <p>Brigadier General Frank D. Turner III, USA</p> <p>Commanding General</p> <p>U.S. Army Developmental Test Command</p>
4:30 p.m. - 5:00 p.m.	<p>U.S. Army Security Assistance Command (USASAC)</p> <p>BG Clinton T. Anderson</p> <p>Commanding General</p> <p>U.S. Army Security Assistance Command</p>

Monday, February 5, 2007 (continued)

5:00 p.m. - 6:30 p.m.

Annual Conference Reception
The DeAnza Ballroom I and II
The Portola Plaza Hotel at Monterey Bay

Evening on Own - Enjoy Monterey!

Tuesday, February 6, 2007

7:00 a.m. - 8:00 a.m.

Continental Breakfast
Serra Ballroom Foyer
The Monterey Conference Center

7:00 a.m. - 12:00 noon

Registration Check-in continues
Serra Ballroom Foyer
The Monterey Conference Center

Session III

Chairman: Mr. Tom Bagwell, Deputy Program Executive Officer
Combat Support & Combat Service Support (DPEO CS&CSS), U.S. Army

Serra Ballroom
The Monterey Conference Center

8:00 a.m. - 9:00 a.m.

Current Fleet Challenges
Colonel Scott Kidd, USA
Project Manager, Tactical Vehicles

Mine Protection & Route Clearance Vehicles
Colonel Timothy G. Goddette, USA
Project Manager, Force Protection

Each Project Manager will discuss perspectives and challenges of maintaining and sustaining the TWV fleet in wartime.

9:00 a.m. - 9:45 a.m.

Future Force Joint Light Tactical Vehicle
Colonel John "Steve" Myers, USA
Project Manager, Future Tactical Systems (Provisional)

Lieutenant Colonel Rubin "Ben" Garza, USMC
Product Manager, Joint Light Tactical Vehicle, Marine Corps Systems Command

PM's will present an overview of the Joint Light Tactical Vehicle (JLTV) program.

9:45 a.m. - 10:00 a.m.

Coffee Break
Serra Ballroom Foyer

10:00 a.m. - 12:00 noon

Tactical Wheeled Vehicles (TWV) Modernization Corporate Board of Directors
Moderator: Brigadier General John R. Bartley, USA
Program Executive Officer, Combat Support & Combat Service Support (PEO CS&CSS)

Panel Members:

Major General Roger A. Nadeau, USA
Commanding General,
United States Army Research, Development and Engineering Command (RDECOM)

Major General William M. Lenaers, USA,
Commanding General,
United States Army Tank-automotive and Armaments Command (TACOM)

Brigadier General James Chambers, USA,
Commanding General/Commandant,
USA Transportation Center and School

12:00 noon

Wrap-up and Conclusion
Mr. Gary Tull
Vice President, Government Operations, AM General Corporation
and Chairman, Tactical Wheeled Vehicle Division, NDIA

- Adjourn until February 4, 2008 -

*The National Defense Industrial Association wishes to
acknowledge the following
Golf Tournament and Super Bowl Party Sponsors:*

AM General

Armor Holdings Aerospace & Defense Group

BAE Systems

Bodycote Testing Group

Burtek, Inc.

Caterpillar, Inc.

Ceradyne, Inc.

CMS Inc.

Coorstek

Cummins Inc.

Defense Products Marketing, Inc.

DRS Technologies, Inc.

Eagle Support Services

EnerSys / Hawker Battery

Force Protection Industries, Inc.

Freightliner LLC

~~~~~

~~~~~

General Kinetics

Hayes Lemmerz International, Inc.

International Truck & Engine Corp.

Lockheed Martin JLTV Team

LORD MR Suspensions

Mack Trucks

Meggitt Defense Systems, Inc.

Miltope Corporation

MTS Technologies, Inc

**Nevada Automotive Test Center
(Hodges Transportation, Inc.)**

Oshkosh Truck Corporation

Pewag, Inc.

PPG Industries, Inc.

Premier Professional Systems, Inc.

Textron Marine and Land Systems

VSE Corporation

Thank-you for your generous support!

Sponsorship Acknowledgement (continued)



2007 Tactical Wheeled Vehicle Conference



Brigadier General Clinton T. Anderson
United States Army Security Assistance Command



U.S. Army Organization for Security Assistance

U.S. ARMY

- POLICY -

Deputy Assistant Secretary of the Army for
Defense Exports & Cooperation
Rosslyn, VA

- MATERIEL -

Army Materiel
Command
Ft. Belvoir, VA

**Security Assistance
Command
Ft. Belvoir, VA**

Life Cycle Management
Commands
Security Assistance
Management Directorates

- MEDICAL -

Office of the
Surgeon General
Washington, DC

Medical
Management
Activity

- ENGINEER -

Corps of
Engineers
Washington, DC

- TRAINING -

Training & Doctrine
Command
Ft. Monroe, VA

- CONUS TRAINING -
Security Assistance
Training Field Activity
Ft. Monroe, VA

- OCONUS TRAINING -
Security Assistance
Training Management
Organization
Ft. Bragg, NC

Legend:

— Command
- - - Coordination / LOA Tasking

USASAC Mission



- USASAC serves as the **Army Executive Agent for Security Assistance** materiel and services programs in support of US National interests
- USASAC has **“Lifecycle Management” responsibility** for all SA activity from Pre-LOR and Case Development through Case Execution and Case Closure
- USASAC serves as the proponent for the Army SA Information Management and Financial Policy
- USASAC provides **policy and procedural direction to the Army SA community**
- USASAC serves as the **proponent for AMC SA Financial and Budget Execution**



Security Assistance in Support of US Army Objectives

“ How can we leverage FMS to help sustain critical product lines to surge production capability quickly to meet sudden warfighter requirements?”

Institutional Army Task Force –task from VCSA

“...to facilitate Interoperability with allied and coalition partners and supported U.S. national security interests (Political, Military, Economic...)”

Specified task – Foreign Military Sales (ST-FMS) – Army Campaign Plan Task

“...proactive Engagement....COCOM focus”

Gen Griffin, AMC Commander

A collaborative Partnership with USASAC, the Army Acquisition Community, and the Defense Industry



Accomplishments in Support of Afghanistan



USASAC serves as single source of FMS Support to Afghanistan

- \$6.5B program with unique mission of supporting U.S. War Fighters' Train & Equip efforts
- Supporting up to projected 70,000-man Afghan military force and 60,000-man police force

Current Top Army FMS Programs:

- 11,320 Light Tactical Vehicles (LTV) on contract; 4,394 shipped since April 2005
- 1,512 Medium Tactical Vehicles (MTV) on contract; 1,083 shipped since August 2005
- 539 Heavy Tactical Vehicles (HTV) on contract; 300 shipped since May 2005
- Weapons, Vehicles and Individual Equipment to support an increase to the Afghani Security Forces capabilities

***Strong Partnership
with***

Tank-Automotive Command (TACOM)



Accomplishments in Support of Iraq

Current procurement options to support Iraq:

- Multinational Security Transition Command – Iraq (MNSTC-I) to date had procured most equipment through:
 - Joint Contracting Center - Iraq (JCCI) via direct commercial sales contracts
 - TACOM acquisition – non FMS channels
- To date USASAC:
 - Processed 48 FMS cases totaling \$1.9B using Training & Equip Funds
 - In development of \$1.3B in FMS cases to increase and modernize Iraqi Security Forces capability
- SAO cell in country continues to expand as mission expands

Current Top Army FMS Programs:

- HMMWVs – an additional 469 M1151s for the Iraqi Army
- Wheeled APCs – Requirement for 398 vehicles with expedited delivery
- Weapons and Individual Equipment to support an Iraqi Army increase
- Weapons and vehicles to support increase in police force capability



LEAN 6 Sigma Level of Effort

- Transform Cold War bureaucratic business processes into efficient, cost effective, and more responsive standardized business processes to increase customer satisfaction.
- Conducted 3 LEAN/Six Sigma (LSS) Value Stream Analysis (VSA)
 - Resulting in 23 LSS Rapid Improvement Events (RIEs) that analyzed many of our processes
 - Resulting in over 82 "Projects" and 147 "Do Its" that changed business process for the better
- To date over 190 Army Materiel Command (AMC) Foreign Military Sales (FMS) Admin Funded personnel have participated in a LEAN event or received LEAN training

Meeting New Challenges with New Thinking



AMC Security Cooperation

USASAC-Army's Face To The World

The Bottom Line:

Managing 3791 cases with an undelivered value of \$16.5B

Total program value, \$60B – average \$3.6B in annual sales.
(Total sales for FY 06 -- \$5.4 Billion).

- Each billion of FMS sales equals approximately 20,000 man-years of direct employment.
- FMS pays for 1148 man-years in AMC.

Army FMS is a link to 140 different Armies, 47 Air Forces, 26 Navies and 26 other country entities.

32 COPRODUCTION
PROGRAMS WITH OVER
\$32 BILLION PROGRAM VALUE

119 Security
Assistance Offices



2007 Tactical Wheeled Vehicle Conference



Brigadier General Clinton T. Anderson
United States Army Security Assistance Command



Back Up Charts



...leverage FMS to help sustain critical product lines

- Constant communication with Acquisition community
 - PM CCWS, PM ARH, PM Apache, PM Stryker
 - Regularly engage Program Executive Officers (PEOs)
- Frequent Participation in International Air/Trade Shows
- Daily Interaction with the Defense Industry
 - Raytheon
 - AM General
 - Lockheed Martin
 - Harris Radio
 - Colt
 - DRS Technologies
 - Sikorsky
 - Boeing
 - Thales
 - Armor Holdings
 - ATK
 - VSE Corp
 - General Dynamics (LS & OTS)
 - ITT Industries
 - BAE
 - Bell/Textron
 - Dyncorp International



...facilitate Interoperability with allied and coalition partners

- Army Goal is to enhance the sharing of targeted technologies with our foreign partners to help offset development and fielding costs while not compromising our edge on the battlefield.
- Foreign Disclosure Officer advises and assists in all matters relating to co-production and technology disclosure
 - Reviews ITAR and MTCR issues
 - Coordination with DoD
- Country/System Examples:
 - NVDs – Australia, Azerbaijan, Colombia, Israel, Nepal
 - Helicopters – Algeria, Bahrain, Philippines, UAE, Saudi Arabia
 - Stinger – Norway
 - Tanks – Saudi Arabia, Australia



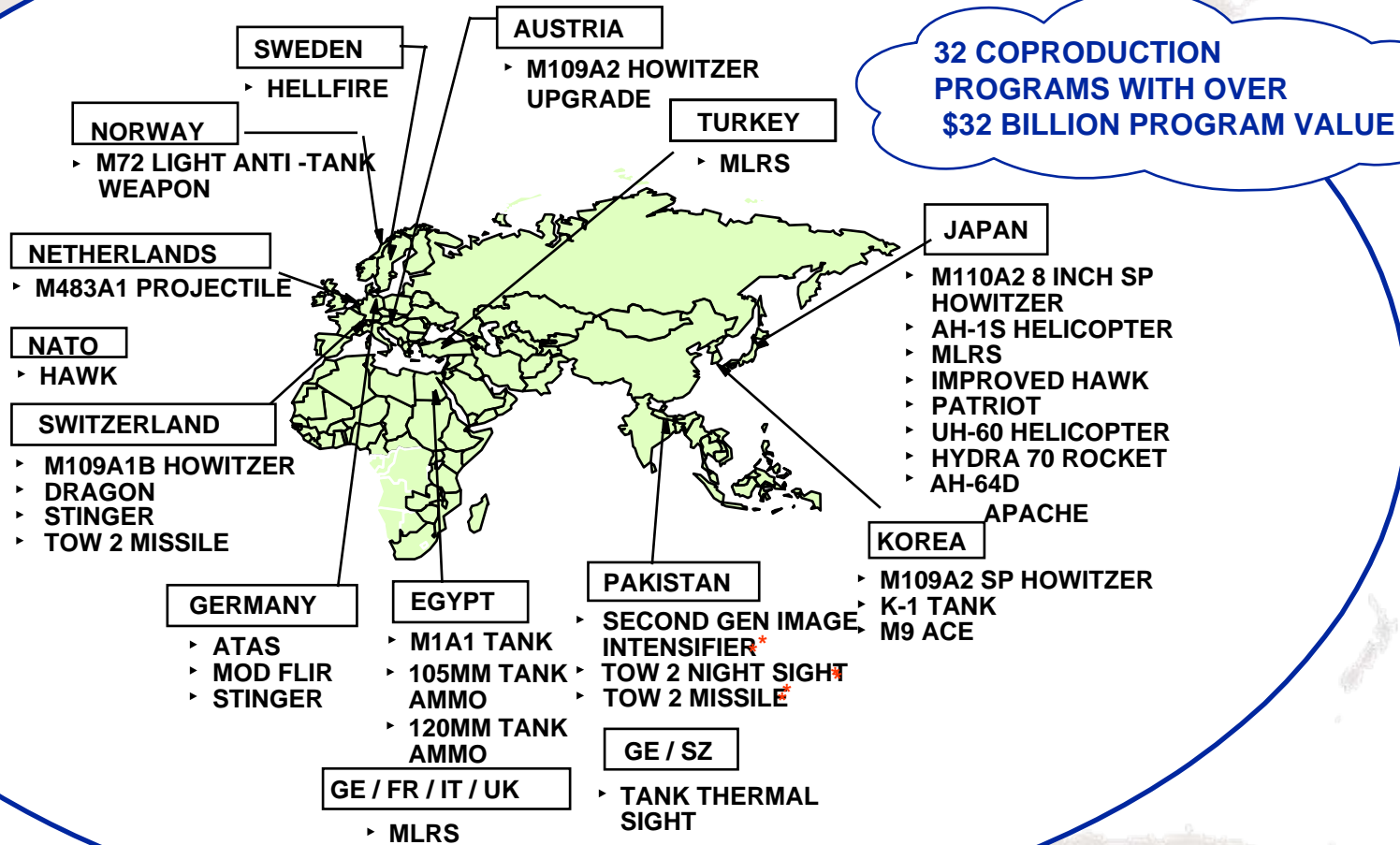
...COCOM focus

- Security Assistance LNO's embedded in COCOM HQs and with MNSTC-I and CSTC-A to facilitate case development and execution.
- Plans Officer involvement in
 - COCOM Theater Security Cooperation Plans
 - Army Component Security Cooperation Plan
 - Army Security Cooperation Strategy
- Expedite success
 - Year end work
 - Iraq and Afghanistan equipping issues
 - NDAA section 1206 Program

Has paid BIG Dividends!



Army Coproduction

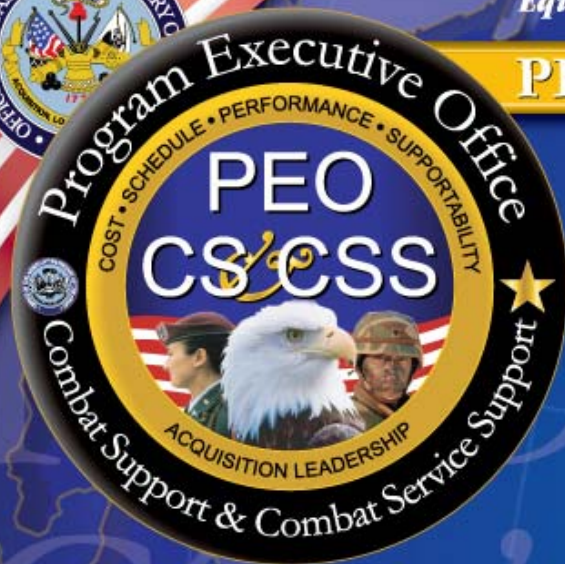


* Suspended



Military Sales Policies

- THE PRESIDENT CERTIFIES ELIGIBLE COUNTRIES
- THE RELATIONSHIP WITH THE PURCHASING COUNTRY IS CRUCIAL ...
... **THE U.S. DESIRES MORE THAN JUST A SIMPLE SELLER AND BUYER RELATIONSHIP**
- EACH SALE IS MADE IN ACCORDANCE WITH THE POLICIES AND STRATEGIC INTERESTS OF THE U.S. GOVERNMENT
- **THE U.S. GOVERNMENT WILL NEITHER MAKE NOR LOSE MONEY**
- **U.S. INDUSTRY DOES THE MARKETING** -- U.S. DEFENSE DEPARTMENT PROMOTES THE ACQUISITION OF STANDARD SERVICE CONFIGURATION
- THE U.S. GOVERNMENT HAS **NO PREFERENCE BETWEEN MILITARY SALES AND COMMERCIAL SALES**
- MATERIEL IS EITHER SHIPPED FROM U.S. GOVERNMENT STOCKS OR FROM PRODUCTION -- **THE U.S. ARMED FORCES HAVE PRIORITY**
- **OUR GOAL IS TO FIELD A TOTAL PACKAGE AND PROMOTE SELF-SUFFICIENCY**



Equipping our Joint Warfighters with the World's Best Capability, Today and Tomorrow

PEO CS&CSS

*Program Executive Office
for
Combat Support & Combat Service Support*

***NDIA 2007
Tactical Wheeled Vehicle
(TWV) Conference***

JOHN R. BARTLEY

Brigadier General, USA

Program Executive Officer,

Combat Support & Combat Service Support



Agenda

PEO CS&CSS

- **Challenges**
- **TWV Transformation Goals**
- **TWV Board of Directors (BOD)**
- **TWV Strategy**
- **Long-Term Armor Strategy**
- **Strategy for Future Acquisitions**
- **Partnerships**

*Equipping our Joint Warfighters with the
World's Best Capability, Today and Tomorrow*



Our Challenge

PEO CS&CSS



Our Challenge

PEO CS&CSS

Is to be Prepared for....

◆ Changes in Environment

- Responsive to Natural Disaster, Regional Conflict
- Quality Product with Accelerated Deliveries and Quantities
- Create Contracts with Maximum Flexibility
- Time = Seconds/Minutes/Hours NOT Days/Months/Years

◆ Changes in Technology

- Ability to Keep Step with Technology Advances
- The Army is serious about designing with Future Growth in Mind - Headroom - Improve Capability, Survivability, Network Communication and Reduce Burden on Soldier and Operating Costs

◆ Changes in Mission

- Add on Armor's Burden on Vehicles, Payload Effects and System Reliability
- Use the Feedback Information from Rotations to Influence Design and Joint Efforts



"You're looking at a calendar while I'm looking at my watch"

LTG Russel L. Honoré

CG 1st Army on Hurricane Katrina Relief Effort



- **Evolving Threat Environment
Generating More Demands of Our
Systems**
- **TPE Completing 3rd Major Rotation
and Getting Tired.**
- **Accelerated Deployment of Multiple
BDEs in FY07**



Overarching TWV Transformation Goals

PEO CS&CSS

Four Main Warfighting Capabilities

➤ Safety:

- Reduce Non-Combat Casualties
- Crew Compartment Crush Resistance
- Improved Crew Restraints
- Human Factors (Seating, Visibility, Reduction of Operator Fatigue)
- Integrated Driver Vision Aids
- Collision Avoidance & Stability Control
- Anti-Lock Brakes
- Suppression of vehicle fires
 - Predictive Failure System

➤ Survivability:

- Armor Protection
- Force Protection/Self-Defense
- Vehicle Control Enhancement
- Reduced Aural & Visual Signatures

➤ Reliability/Maintainability Leads to Supportability:

- Increased Reliability
- Reduced # of Tools
- Reduced Non-Operator Organic Maintenance Tasks
- Reduced Operator Maintenance Tasks
- Reduced Scheduled Maintenance Tasks and Intervals
- Decreased Mean Time To Repair (MTTR)
- Reduced Operator/Maintenance Training
- Parts Commonality

➤ Distribution & Mission Enhancement:

- Force Sustainment
 - On-Board Power Generation
 - On-Board Water Generation
- Operational and Sustainment (O&S) cost savings
- Power Management/On-Board Power
- Deployability
 - Reduced Curb Weights
 - "Quick" Component/Kit Installation & Removal, and On-Board Storage
- Operational Range
 - Greater Distances
 - Increased Fuel Efficiency
- Distribution of Materiel, Equipment & People
- Network Centricity (C4ISR)
 - Integrated Hardware/Mass Storage Suite
 - Open Software Architecture
- Mobility
 - Improved Soft Soil Traversing Characteristics
 - Improved Vehicle Stability and Handling Characteristics
- Improved Vehicle Ride Dynamics (Vibration Reduction)

Configuration Management & Control

*Equipping our Joint Warfighters with the
World's Best Capability, Today and Tomorrow*



Tactical Wheeled Vehicles (TWV) Board of Directors

PEO CS&CSS

- **Mission:** *The TWV Board of Directors is a steering committee of key leaders that maintains oversight on the progress of transforming TWV strategy into reality and accomplishment of stated objectives.*
- **Standing Members:**
 - MG Roger Nadeau, CG, RDECOM
 - MG Mike Lenaers, CG, TACOM LCMC
 - BG John Bartley, PEO CS&CSS
 - BG James Chambers, Chief of Transportation
 - MG Timothy Mchale, Director, Center for Logistics Readiness (G4)
 - Mr. Al Resnick, Director, Requirements Integration Futures Center, TRADOC
 - COL Johansen, Focused Logistics Division, G8
- **At Large Members – Included, but not Limited to:**
 - CG, Army Combined Arms Support Center
 - CG, Army Test and Evaluation Command
 - CG, Army Ordnance Center
 - Commander, Combat Readiness Center
 - ASA(ALT) Deputy for Acquisition Systems, HQ Army Material Command, USA
 - ARMY G3, (DAMO-FMO) and G03, (DAMO-CI)
 - Director of Supply, Ordnance, and Logistics Operation Division, USN
 - Director, Logistics Plans, Policies, and Strategic Mobility Division, USMC
 - Director of Logistics Readiness, (AFILG), USAF
- **Method:**
 - Monthly Status Updates
 - Review, Deliberate, and Make Decisions Concerning Key TWV Issues



TWV BOD FOCUS

PEO CS&CSS

➤ Key Activities this Past Year:

- Directed the FTTS ACTD Effort and Transition
- Shaped the Platform Performance Demonstrations
- Accelerated JLTV Forward
- Focusing S&T efforts for TWVs
 - Survivability ATO
 - Hybrid Electric ATO
- Conducted Modeling & Simulation to Address Risk in overweight Environment

*Equipping our Joint Warfighters with the
World's Best Capability, Today and Tomorrow*



TWV Strategy Changes

PEO CS&CSS

2006 2007 2008 2009 2010

2020+

CURRENT FORCE

FUTURE FORCE

Current
Fleet
Upgr

FTTS ACTD
Now Feeds
JLTV Requirements

- ✓ Platform System Demonstration Complete
- Military Utility Assessment @ Ft. Lewis Mar 07
- JLTV CDD Approved 3QTR07

Tech
Insertion

Expected modernization Initi

Targeting Nov 07 for MS B for JLTV

New
Vehicle
Production

HMMWV

FMTV

HEMTT

Light/Medium
(Follow on Contracts)

Then

Now

Update TWV
Strategy Report
this Year

ACTD
PSD
EMIP
CTV

JLTV

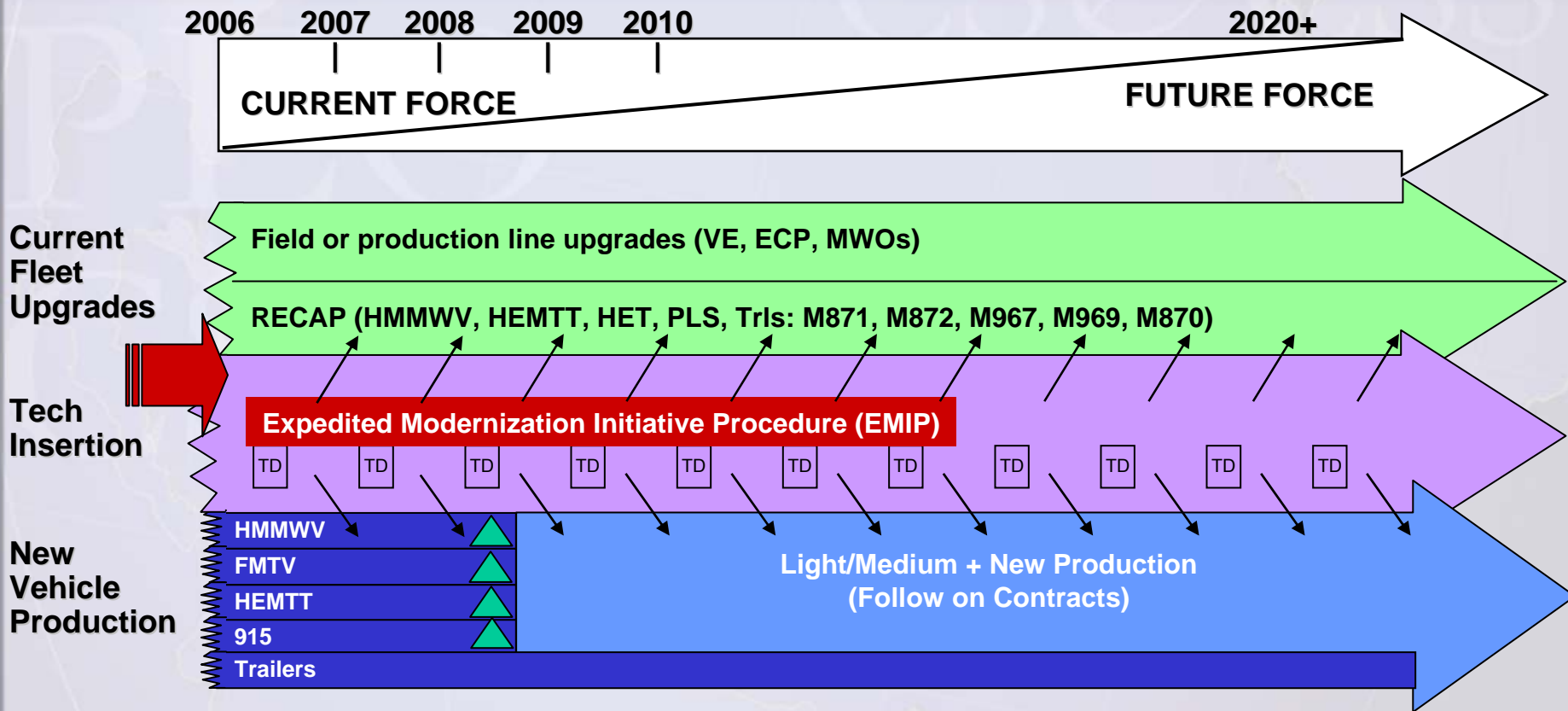
fighters with the
World's Best Capability, Today and Tomorrow



TWV Path Forward

PEO CS&CSS

PEO CS&CSS



Long-Term Armor Strategy (LTAS)

PEO CS&CSS

- **LTAS is the second generation of TWV armoring strategies. It's separate and distinct from current near-term SWA AoA efforts which fulfilled an urgent need.**

- **LTAS**

- Employs a modular concept – “A-Kit and B-Kit”
 - Provides protection levels as mission dictates
 - Peacetime and wartime configurations
- Utilizes lessons learned from AoA



- **Program continues for Medium and Heavy Fleets**

- **Temporarily Suspended for Light Fleet Beyond M1151**

- GVW over maximum w/ Frag Kits
- Continue to improve and evaluate chassis enhancements
- JLTV will be designed to support the LTAS concept
 - JLTV/LTAS will continue to research lighter weight ballistic materials



Strategy for Future Acquisitions: Rapid Change & Upgrade of Large Number of Systems

PEO CS&CSS

The Idea!



- A Kit / B Kit Development
- Plug and Play Capability
- Modularity
- Flexibility

The Reality!



***Giving the Commander in the Field the Ability to Adapt to
Changes...to Mission...to Environment ...to Technology!***

*Equipping our Joint Warfighters with the
World's Best Capability, Today and Tomorrow*



Accomplishing More with Partnerships

PEO CS&CSS

- **Stand on Each Other's Shoulders to Reach Higher and Achieve More Together - Focusing Resources to Achieve TWV Transformation**
- **Rely on Each Others Core Competencies**
 - Complement vs. Duplicate
 - Leverage for Mutual Benefit
- **Extend Relationships with Other Industry Partners to Deliver More Capability**
 - EMIP
 - Platform Systems Development
- **Utilize Government Resources**
 - Easy Access to Labs & Technical Expertise

*Equipping our Joint Warfighters with the
World's Best Capability, Today and Tomorrow*



Thank You

PEO CS&CSS

- **We are living in demanding times.**
- **Breaking new ground in the rapid expansion of our truck fleets through modularity and transformation.**
- **Need bold and innovative solutions to ever evolving threats to U.S. Forces across the globe.**
- **We will ask for more with the primary goal of ... Equipping Our Joint Warfighters with the World's Best Capability.**

Thank You!

*Equipping our Joint Warfighters with the
World's Best Capability, Today and Tomorrow*



Preparing the Army Reserve for the Fight

*Major General Alan Bell
Deputy Commanding General
U.S. Army Reserve Command*

February 2007

A wide, horizontal, light gray bar with a slight gradient, tapering at both ends, located at the bottom of the slide.



Vision Statement

The Army Reserve is a community-based federal operational force of skill-rich Warrior-Citizens providing complementary capabilities for joint expeditionary and domestic operations.



Army Reserve Serving a Nation at War

- 165,444 Army Reserve Soldiers mobilized since 9/11
- 28,586 Army Reserve Soldiers mobilized today
- 20 Different Countries that Army Reserve Soldiers are serving in

The Human Toll

- 131 Army Reserve Soldier Deaths
- 943 Army Reserve Soldiers Wounded in Action
- 2 Army Reserve Soldiers Captured



Conditions Have Changed

THEN

- Discrete War
- War as Exception
- Mobilization of RC as Exception
- Whole Units
- Mass over Time
- AR-Supplementary Force
- Linear Battlefield
- Secure Rear Area
- Theaters of War

NOW

- Continuous War
- War as Norm
- Mobilization of RC as Norm
- Kludged Units
- Ready Now
- AR-Complementary Force
- Asymmetrical Battlefield
- No Secure Rear Area
- Global Operations



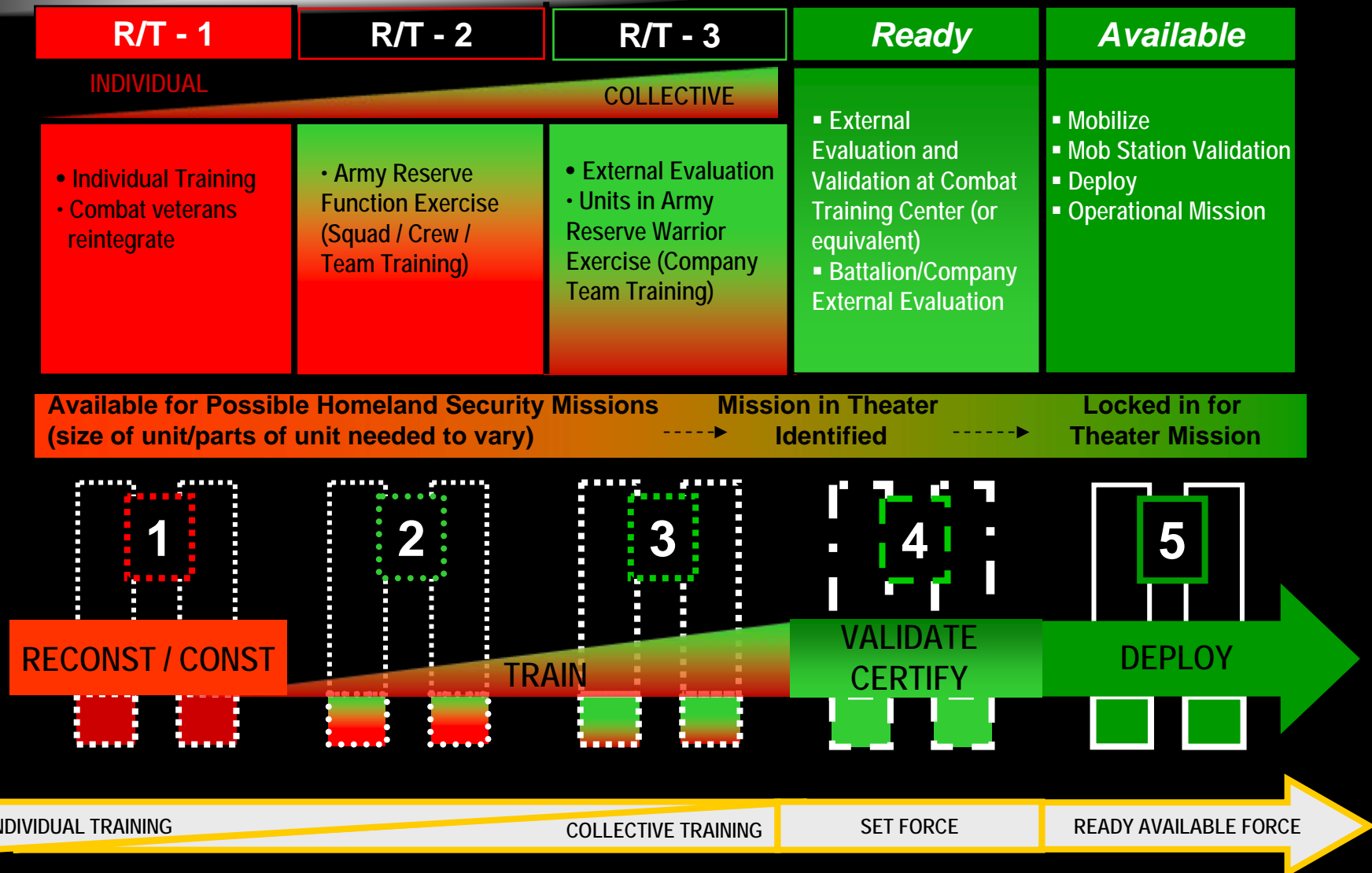
Commander's Intent

It is my intent to ensure the Army Reserve continues to provide relevant, joint warfighting capabilities wherever and whenever the Nation requires.

*--LTG Jack C. Stultz
Chief, Army Reserve*

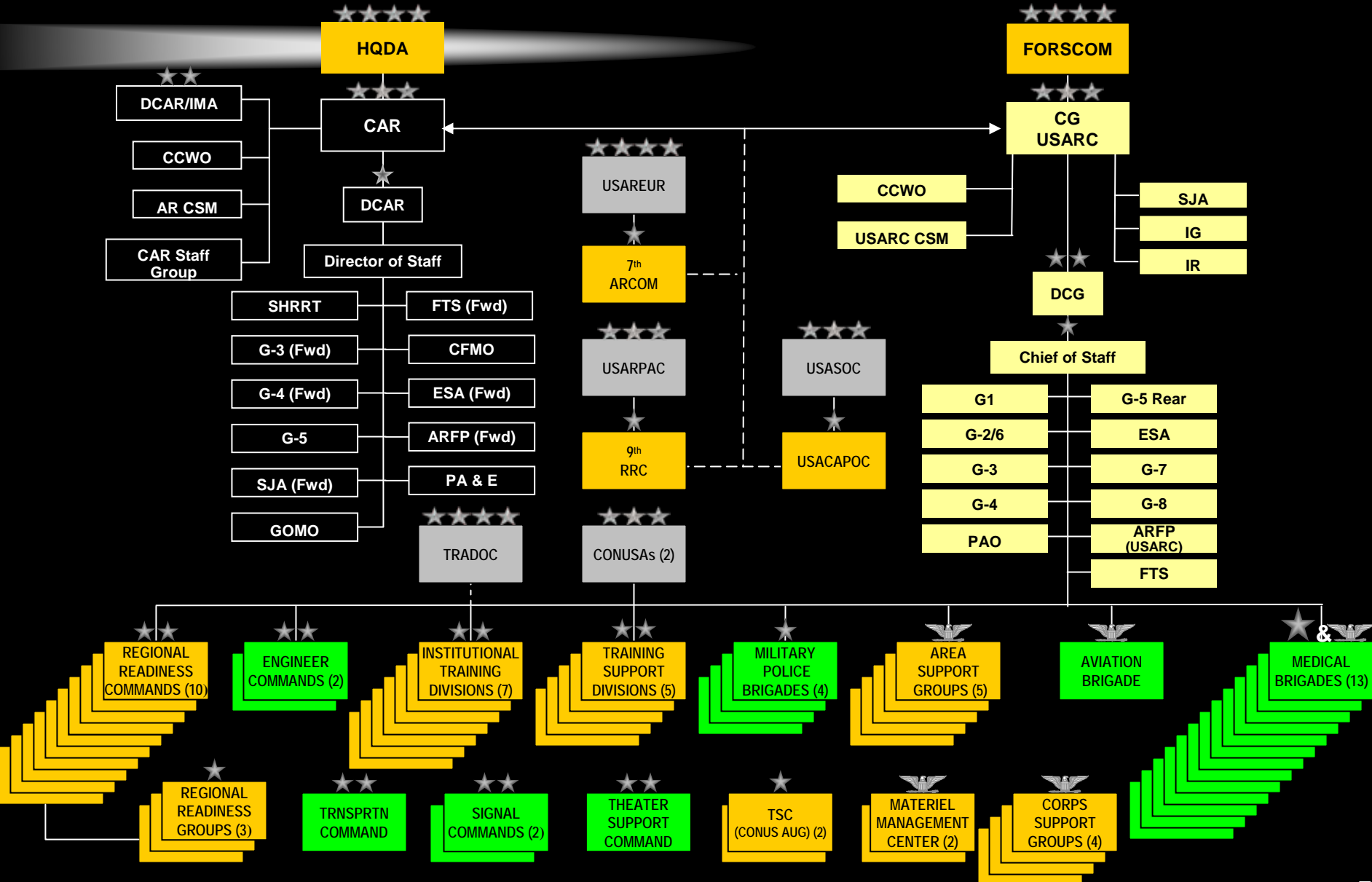


Army Reserve Support to ARFORGEN



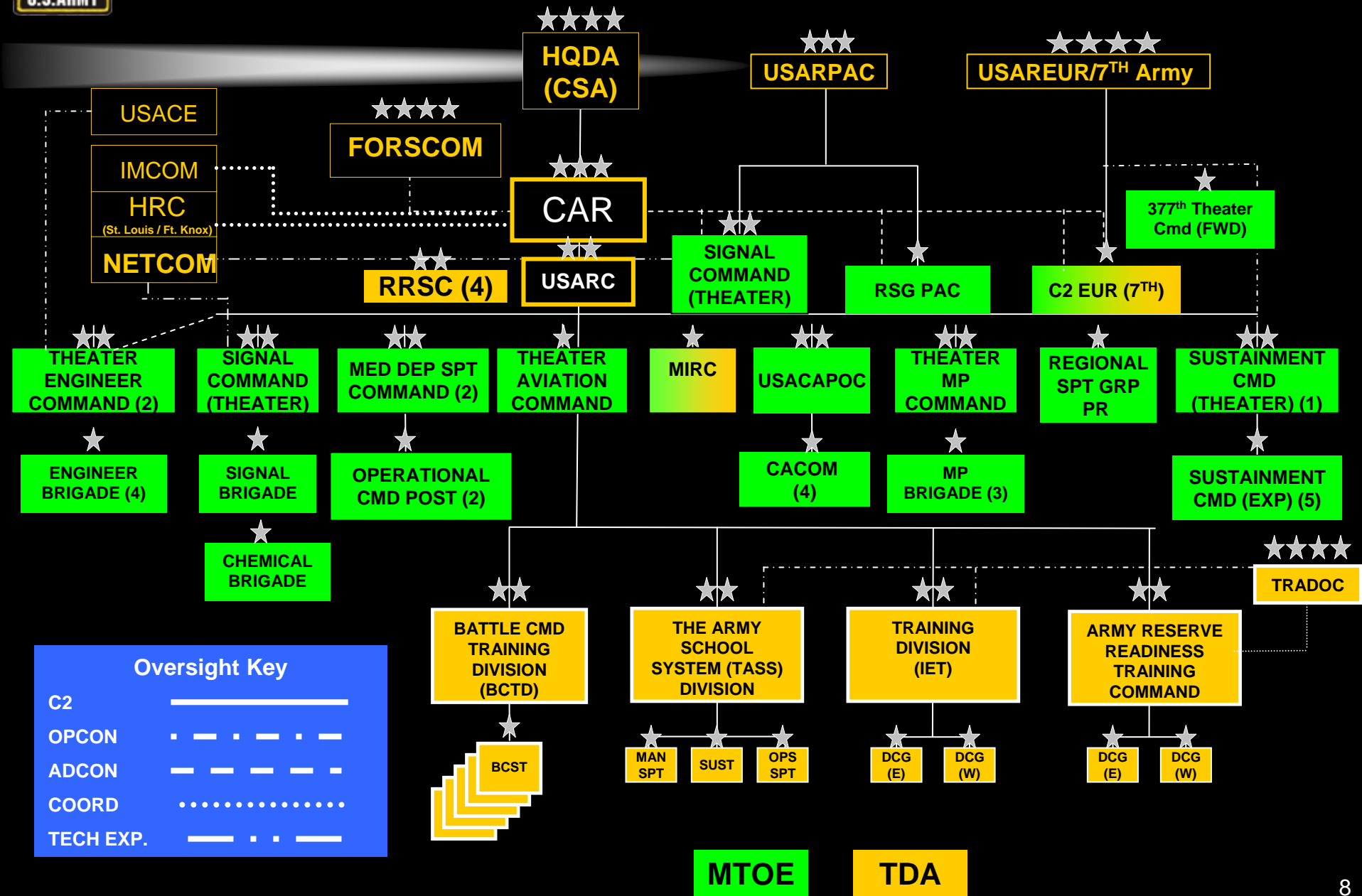


Army Reserve in the Past





Army Reserve Transformed



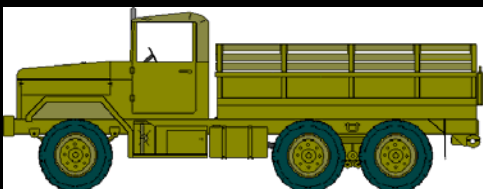


Army Reserve Equipping Sources

- New procurement
- The redistribution or cascading of equipment from the Active Component
- Recapitalization and Overhaul of old (Legacy) equipment
- Congressional adds
- National Guard and Reserve Equipment Appropriation (NGREA)
- Supplemental

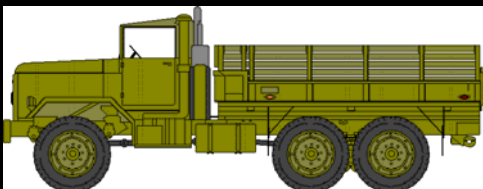


Army Reserve Challenge: Age of Equipment



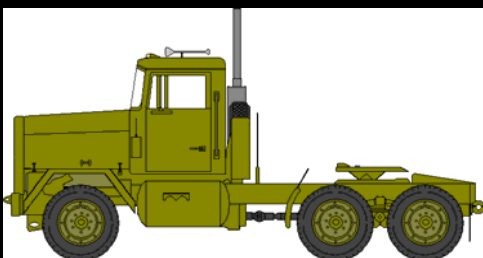
M35 Series 2.5-Ton Truck

Economical Usage Life: 20 years
Average USAR Fleet Age: 35 years



M900 Series 5-Ton Truck

Economical Usage Life: 20 years
Average USAR Fleet Age: 24 years



M915 Line-Haul Tractor

Economical Usage Life: 20 years
Average USAR Fleet Age: 24 years



Army Reserve Challenge: Unfunded Modernization Requirements

EQUIPMENT ITEM	ITEM COST	TOTAL COST
LIGHT MED TACTICAL VEHICLE (LMTV) 2.5-T TRUCK	\$176,428	\$425,367,908
MEDIUM TACTICAL VEHICLE (MTV) 5-TON TRUCK	\$183,333	\$761,381,949
TRUCK CARGO PLS 10X10 M1075	\$360,139	\$106,241,005
PLS TRAILERS	\$46,731	\$25,094,547
HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE	\$61,665	\$303,700,125
HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV) UP-ARMORED M1114	\$146,844	\$133,187,508
TRUCK TRACTOR LINE HAUL (M915A3)	\$162,968	\$70,728,112

**Total Unfunded Vehicle Requirements:
\$1.826 Billion**



Army Reserve Solution: Force Protection to the Soldier





Progress in Army Reserve Logistics

- Implementing logistics program that directly supports the Army Force Generation (ARFORGEN) model.
- Reduced the backlog of equipment, redeployed from Iraq and Afghanistan, for inspection, repair, and/or overhaul from 14,000 to less than 1,500 items.
- Achieved a maintenance readiness level of 91 percent for reportable equipment on hand as fully mission-capable.
- Provided Rapid Fielding Initiative equipment to 62,000 Army Reserve Soldiers
- Integrated 7,014 pieces of equipment transferred from the Active Component to the Army Reserve.
- Inducted 5,337 major end items and 30,725 items for calibration into Depot maintenance.
- Identified \$742 million of Army Reserve stay-behind equipment retained in Iraq for replacement (such as HMMWVs, Trucks, Material Handling Equipment and communication equipment).
- Retired 6,800 M16A1 rifles from Army Reserve units in preparation for M16A2, M16A4, and M4 rifle replacement fielding.



Equipping an Operational Reserve

- The modernization of light-medium trucks (75 percent are not Modular Force compatible or deployable and are not integral to training and operational efficiency).
- The modernization of medium line-haul tractors (50 percent do not support single-fleet policy and are not integral to training and operational efficiency).
- Modular Force equipment needed to support designated individual and collective training locations, including unit level collective training in a field environment.



Equipping an Operational Army Reserve

■ Sustainment Issues:

- Fully fund FY2013 force structure, including replacement of battle and attritional losses due to Operation Iraqi Freedom/Operation Enduring Freedom and the increased training tempo.
- Fully fund Army Reserve participation in the development and fielding of GCSS – A/T and SALE.
- Assure depot maintenance funding at 90 percent or better.
- Recapitalize tactical truck inventory.
- Retain Army Reserve tactical maintenance contract labor to reduce mobilization and training equipment backlogs.



Army Reserve Solution: Equipment Shortfalls

- Implementing Equipment Campaign Plan to work NGREA
- Cross-leveling massive quantities of equipment
- Continuing to execute \$92.0M for Depot Rebuild
- Implementing new Army Reserve Equipping Strategy
- Outsourcing Maintenance



The Centerpiece of the Army Reserve



The American Soldier!



BACK-UP SLIDES



Army Reserve Challenge: Age of Equipment

Average age of equipment exceeds Economical Usage Life

CURRENT ON-HAND ITEM	*EUL	AVG AGE	MOD ITEM	STATUS
2.5-Ton Truck (M35 Series)	20	35	LMTV	RED
5-Ton Truck (M900 Series)	20	24	MTV	YELLOW
HMMWV (All Models)	15	15	HMMWV	YELLOW
M915 Line Haul Tractor	20	24	M915A3	YELLOW
5 Ton & 20 Ton Dump Trucks	15/22	24	M917A1	YELLOW
M878 5-Ton Yard Tractor Truck	10	5	M878A2	YELLOW
M871 22.5-Ton Semi-Trailer	30	20	M871A3	YELLOW
50K Rough Terrain Cargo Handler	10	10	53K RTCH	YELLOW
10K Variable Reach Forklift	15	15	ATLAS	YELLOW

- **Yellow** = Fleet Average Age > than ½ EUL and < EUL
- **Orange** = Fleet Average exceeds EUL + 10 years
- **Red** = Fleet Average Age exceeds EUL + 10- 20yrs



Army Reserve Challenge: Unfunded Modernization Requirements

EQUIPMENT ITEM	TOTAL REQ	ON HAND	ALL SOURCES	SHORT	ITEM COST	TOTAL Short COST FY2006
LIGHT MEDIUM TACTICAL VEHICLE (LMTV) 2.5-TON TRUCK	3665	1254	3104	-2411	\$176,428	\$425,367,908
MEDIUM TACTICAL VEHICLE (MTV) 5-TON TRUCK	4527	374	4527	-4153	\$183,333	\$761,381,949
TRUCK CARGO PLS 10X10 M1075	922	627	627	-295	\$360,139	\$106,241,005
PLS TRAILERS	1232	695	695	-537	\$46,731	\$25,097,547
HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV)	17,145	12,220	13,095	-4925	\$61,665	\$303,700,125
HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV) UP- ARMORED M1114	914	7	7	907	\$146,844	\$133,187,508
TRUCK TRACTOR LINE HAUL (M915A3)	2247	1813	1813	-434	\$162,968	\$70,728,112

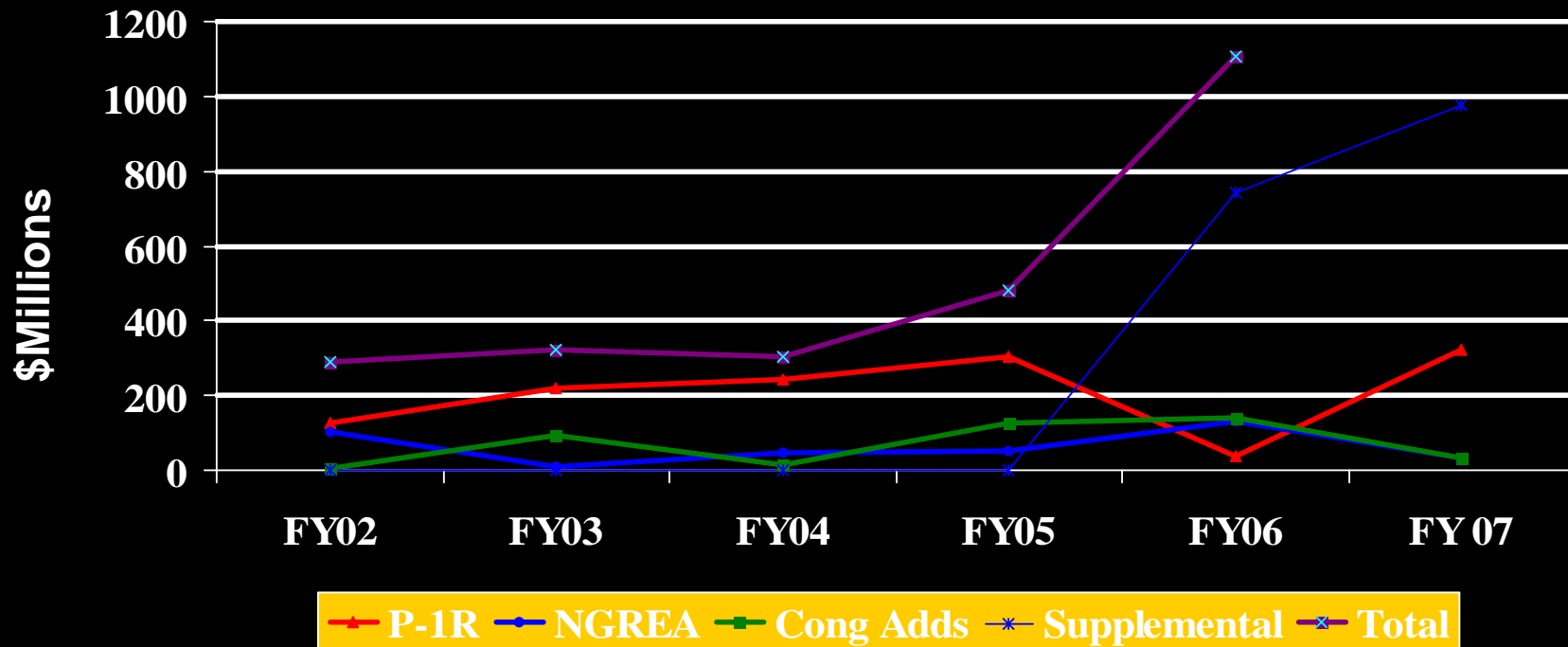
*ALL SOURCES = P1-R, NGRE, CONG ADDS



Modernization Challenges

Army Reserve
requires \$1.6B/yr
over the POM

ARMY RESERVE PROCUREMENT





Current Equipment Status

Assessment based on service life, usage, and EOH as of 31 Dec 06.

- Light Truck Fleet **RED**
- Light/Medium Truck Fleet **RED**
- Medium Truck Fleet **RED**
- Heavy Truck Fleet **AMBER**
- MHE **RED**



Equipment Analysis

- Current reconstitution efforts are directed to the following levels:
 - Organizational, DS and GS maintenance personnel perform joint Technical Inspections
 - Equipment is repaired at DS/GS levels to Fully Mission Capable and Safety Items
 - Organizational maintenance completes repairs to -10/-20 standard
 - Only those items recognized as unserviceable through the TI
 - The frame of vehicles are only inspected visually.
- The result is that our equipment will have **unidentified frame and systems fatigue** and will suffer “delayed desert damage” from foreign substances left in assemblies and components not disassembled for inspection or repair.
- We can expect to see **severe or even catastrophic maintenance failure** of our redeployed equipment. This will occur even in CONUS at peacetime OPTEMPO, beginning no later than FY 2008. Sustainment costs for this equipment will rapidly exceed funding.



Future Analysis

- There are three means by which to correct this problem:
 - Depot maintenance conducted as soon as possible after arrival in CONUS.
 - Recapitalization of the equipment as soon as possible after redeployment.
 - Procurement of replacement equipment between FY 06-11.

- **The solutions, however, are not funded.**
 - Depot maintenance faces an \$372.2M shortfall from validated requirement to funded levels over FY08-13 POM years.
 - Recapitalization currently only addresses 3200 M998 HMMWVs, 162 PLS trucks and 66 HETs. This only 33% of our projected numbers for M998A0/1 HMMWVs and 14% of HETs on-hand in FY 2011.
 - Procurement planned previous to OIF was based on known shortages.
 - Shortages must be reduced and equipment, which is non-deployable or is barely compatible, replaced, to achieve the Modular, “Plug and Play” Army envisioned by the CSA.
 - Immediate funding of \$1.6B to meet Modularity through ARFORGEN is required, with \$300M a year over the POM to sustain the momentum and maintain the force.



Summary

- Lack of adequate funding stream to purchase or upgrade TWV fleet
- Reduced or decremented system quantities and delayed fieldings impacts the ability to meet Transformation goals
- Aging equipment is expensive and labor-intensive to maintain and sustainment funding must be increased
- Substitute or in-lieu-of items perpetuate incompatibility and interoperability issues. These incompatibility issues create impediments to supporting the digitized force and OIF requirements
- Limited benefit from Army Recap program for the Army Reserve

BOTTOM LINE:

- Shortage of new equipment procurement (P-1R) makes funding provided through NGRE, Congressional Add and support of Depot Maintenance Programs vital to the readiness of the Army Reserve TWV fleet



Equipment Assessment

- Light Truck Fleet RED
 - 17,145 REQ, 12,220 O/H, 29% Short
 - 1,452 identified as AOA = SBE CAT 5
 - Shortage includes 907 M1114 UAH
 - 73% of M998 fleet early production A0
 - Deployed 71% of fleet to OIF1, 2 & 3
 - 875 CUCV O/H ILO in TDA
 - 3,905 M998A0 to M1097A0 RECAP funded for FY06-11



Equipment Assessment

- Light/Medium Truck Fleet **RED**
 - 3,665 REQ, 3,104 O/H, 15% Short
 - 1,254 LMTV REQ, SUB by 1,850 M35 series trucks
 - 443 LMTV Planned Procurement
 - Current procurement leaves over 1,000 M35 trucks O/H in FY 2011



Equipment Assessment

- Medium Truck Fleet **AMBER**
 - 4,527 5 Ton Tactical Truck REQ, 4,527 O/H, 0% Short
 - 374 MTV, Subs 4,119 M900 series, 34 M800 series
 - Majority of tractors still require ABS MWO
 - Limited numbers of MTVs being released for deploying units
 - 286 MTV Planned Procurement



Equipment Assessment

- Medium Truck Fleet (M915 Series) **AMBER**
 - 2,247 5 Ton Line Haul Tractor REQ, 1,813 O/H, 19% Short
 - 468 A0 and 631 M915A1 O/H
 - 181 A0 being converted to M915A4, 293 programmed



Equipment Assessment

- Medium Truck Fleet **RED**
 - 922 PLS Truck REQ, 627 O/H, 22% Short
 - 1,22 PLS trailers REQ, 695 O/H, 54% Short
 - 292 identified as AOA = SBE CAT 5
 - 76 PLS Planned Procurement
 - 667 HEMTT REQ, 635 O/H, 5% Short



Equipment Assessment

- Medium Truck Fleet **RED**
 - 601 M870 trailers REQ, 515 O/H, 14% Short
 - 723 M871 trailers REQ, 1,130 O/H, 0% Short
 - 1,140 M872 trailers REQ, 1,849 O/H, 0% Short
 - 1,260 M967 tankers REQ, 1,069 O/H, 15% Short
 - 377 M969 tankers REQ, 468 O/H, 0% Short
 - 480 7.5K tankers REQ, 275 O/H, 43% Short



Equipment Assessment

- Heavy Truck Fleet **AMBER**
 - 343 HET tractors REQ, 338 O/H, 7% Short
 - 343 HET trailers REQ, 336 O/H, 2% Short
 - 743 M916 tractors REQ, 625 O/H, 16% Short
 - 49 M920 tractors REQ, 61 O/H, 0% Short



Equipment Assessment

- Materiel Handling Equipment **RED**
 - 566 4K RTFL REQ, 479 O/H, 15% Short
 - 235 6K RTFL REQ, 223 O/H, 5% Short
 - 810 ATLAS & 10K RTFL REQ, 483 ATLAS & 307 10K O/H, 2% Short
 - 222 53K & 50K RTCH REQ, 87 53K & 69 50K RTCH O/H, 30% Short



Depot Maintenance Program (FY06)

- FY2006 Execution: \$92.062M
 - 180 M931/2 tractors
 - 117 M105 trailers
 - 45 M101 trailers
 - 14 10K RTFL
 - 35 4K RTFL
 - 25 HEMTT
 - 153 HMMWV
 - 146 M923/25 trucks
 - 41 5000K M967 tankers
 - 40 5000K M969 tankers
 - 40 M870 semi-trailers
 - 60 M872 semi-trailers
 - 140 M871 semi-trailers
 - 2300 NVG



DEPOT MAINTENANCE CONTRACTOR SUPPORT

FY 06

- **LEAR SIGLER** **\$12.2M**
 - Trailers, HMMWV, Bridge Boats
- **VSE Corp** **\$15.0M**
 - Trailers, Fuel/Water Pumps, Decons
- **HoneyWell** **\$ 1.5M**
 - 5 Ton Trucks
- **Detyens Shipyards** **\$ 1.8M**
 - Watercraft LCU 2000
- **Metal Trades** **\$ 1.7M**
 - Watercraft LCU 2000
- **Marine Industries NW** **\$ 2.1M**
 - Watercraft LCU 2000



Equipping an Operational Army Reserve

*National Defense Industrial Association
Tactical Wheeled Vehicle Conference.*

*Major General Bruce Casella
Commanding General
63d Regional Readiness Sustainment Command*

5 February 2007



Vision Statement

The Army Reserve is a community-based federal operational force of skill-rich Warrior-Citizens providing complementary capabilities for joint expeditionary and domestic operations.



Army Reserve Serving a Nation at War

- 165,444** Army Reserve Soldiers mobilized since 9/11
- 28,586** Army Reserve Soldiers mobilized today
- 20** Different Countries that Army Reserve Soldiers are serving in

The Human Toll

- 131** Army Reserve Soldier Deaths
- 941** Army Reserve Soldiers Wounded in Action
- 2** Army Reserve Soldiers Captured



Conditions Have Changed

THEN

- Discrete War
- War as Exception
- Mobilization of RC as Exception
- Whole Units
- Mass over Time
- AR-Supplementary Force
- Linear Battlefield
- Secure Rear Area
- Theaters of War

NOW

- Continuous War
- War as Norm
- Mobilization of RC as Norm
- Kludged Units
- Ready Now
- AR-Complementary Force
- Asymmetrical Battlefield
- No Secure Rear Area
- Global Operations



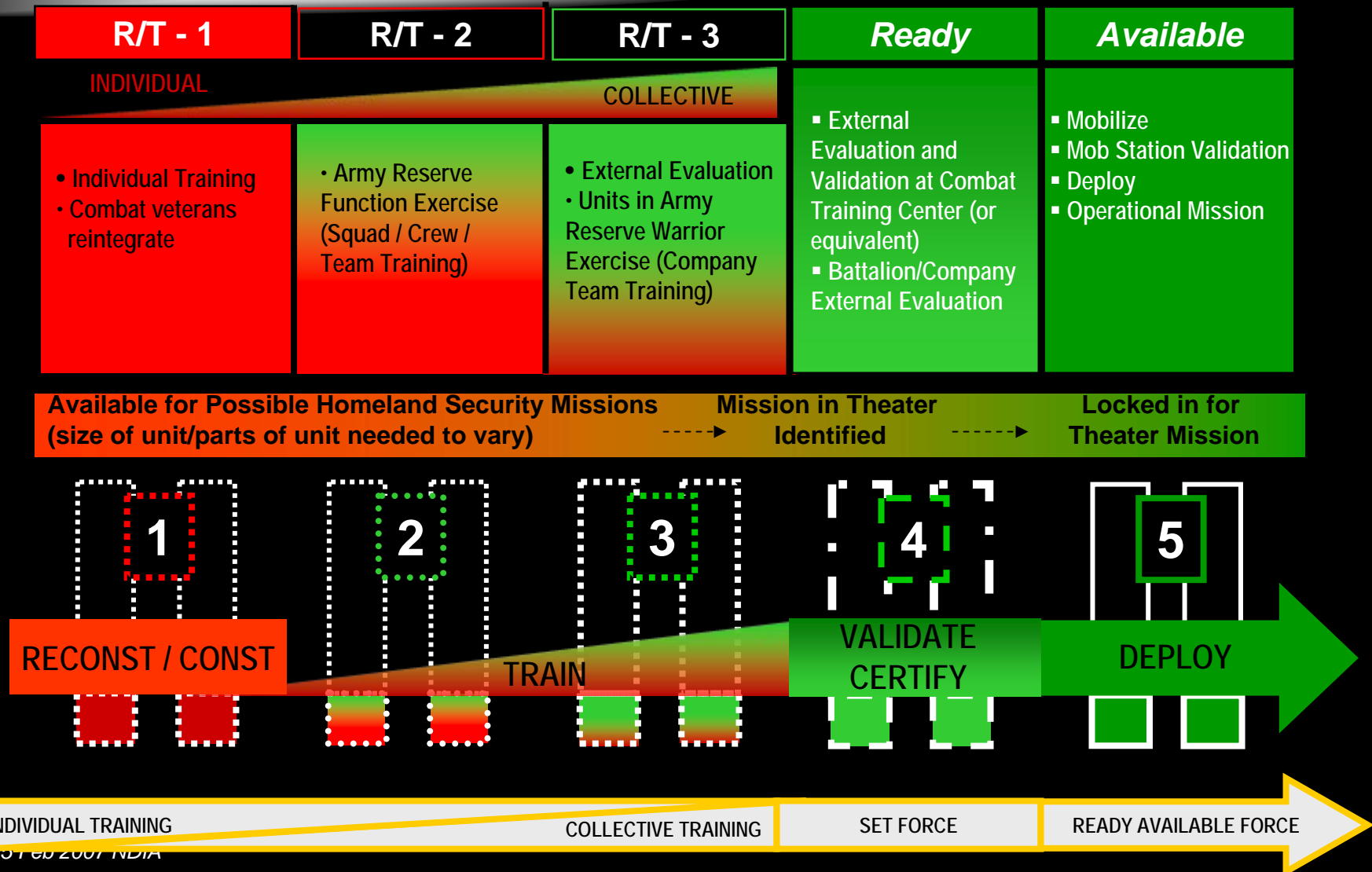
Commander's Intent

It is my intent to ensure the Army Reserve continues to provide relevant, joint warfighting capabilities wherever and whenever the Nation requires.

*--LTG Jack C. Stultz
Chief, Army Reserve*

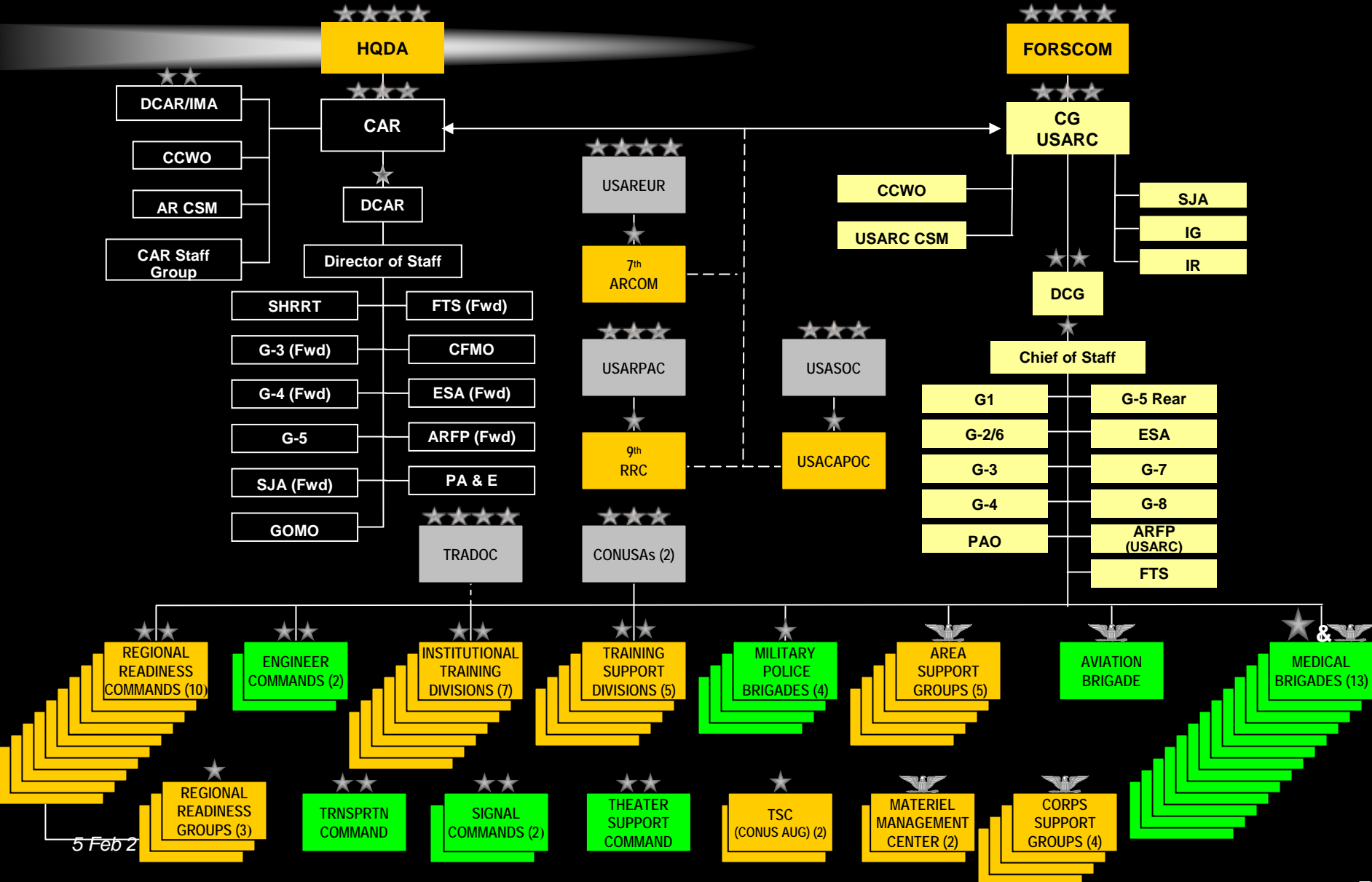


Army Reserve Support to ARFORGEN



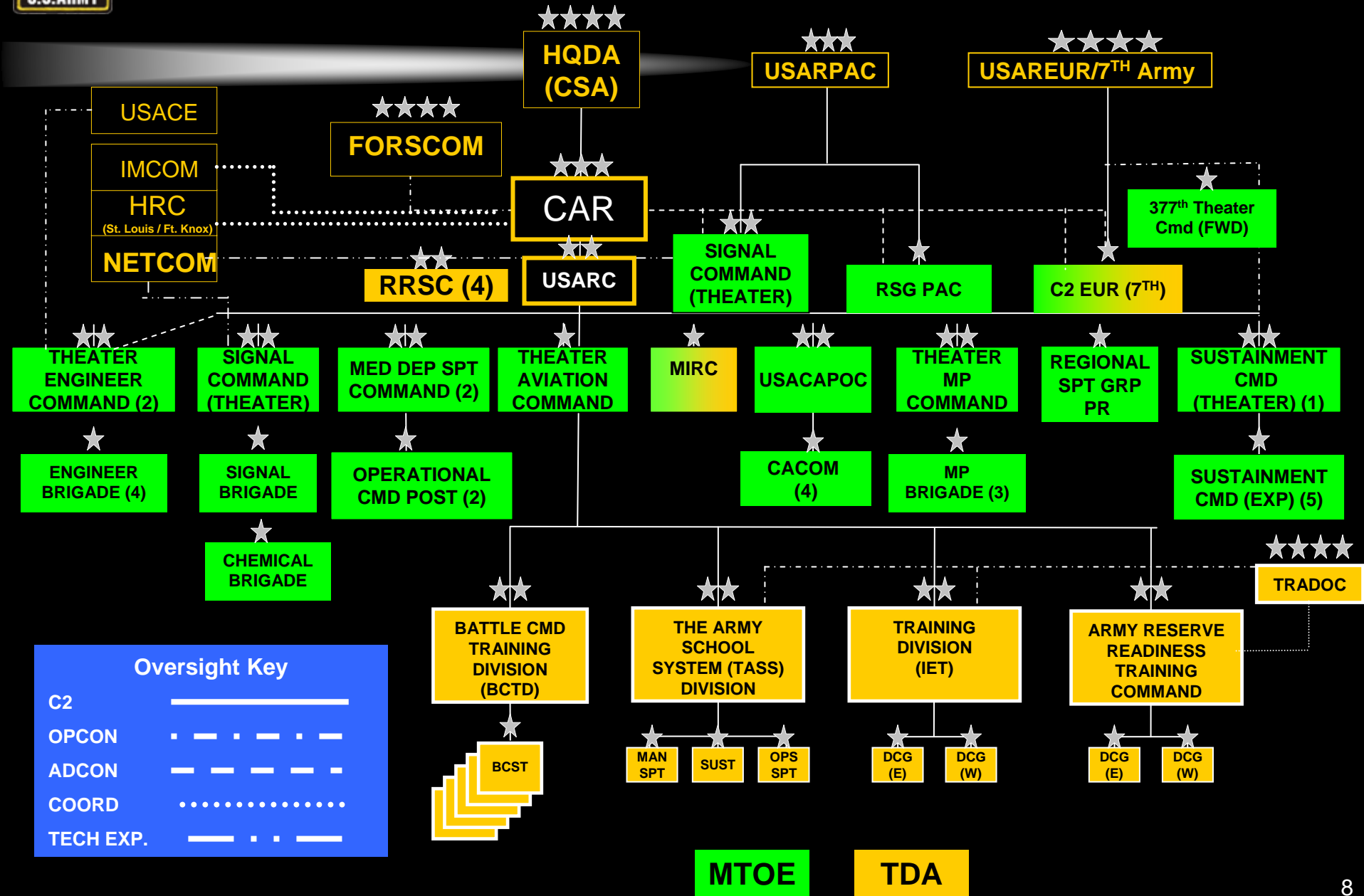


Army Reserve in the Past





Army Reserve Transformed



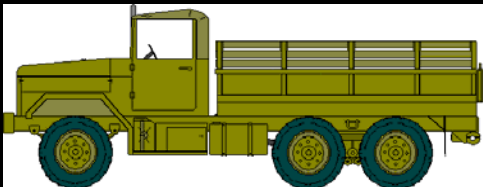


Army Reserve Equipping Sources

- New procurement
- The redistribution or cascading of equipment from the Active Component
- Recapitalization and Overhaul of old (Legacy) equipment
- Congressional adds
- National Guard and Reserve Equipment Appropriation (NGREA)
- Supplemental

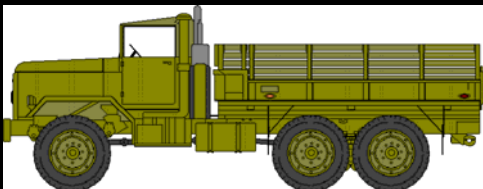


Army Reserve Challenge: Age of Equipment



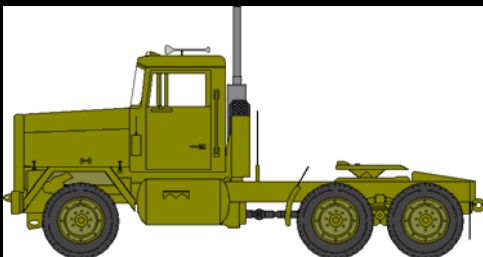
M35 Series 2.5-Ton Truck

Economical Usage Life: 20 years
Average USAR Fleet Age: 35 years



M900 Series 5-Ton Truck

Economical Usage Life: 20 years
Average USAR Fleet Age: 24 years



M915 Line-Haul Tractor

Economical Usage Life: 20 years
Average USAR Fleet Age: 24 years

5 Feb 2007 NDIA



Army Reserve Challenge: Unfunded Modernization Requirements

EQUIPMENT ITEM	ITEM COST	TOTAL COST
LIGHT MED TACTICAL VEHICLE (LMTV) 2.5-T TRUCK	\$176,428	\$425,367,908
MEDIUM TACTICAL VEHICLE (MTV) 5-TON TRUCK	\$183,333	\$761,381,949
TRUCK CARGO PLS 10X10 M1075	\$360,139	\$106,241,005
PLS TRAILERS	\$46,731	\$25,094,547
HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE	\$61,665	\$303,700,125
HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV) UP-ARMORED M1114	\$146,844	\$133,187,508
TRUCK TRACTOR LINE HAUL (M915A3)	\$162,968	\$70,728,112

**Total Unfunded Vehicle Requirements:
\$1.826 Billion**



Progress in Army Reserve Logistics

- Implementing logistics program that directly supports the Army Force Generation (ARFORGEN) model.
- Provided Rapid Fielding Initiative equipment to 62,000 Army Reserve Soldiers
- Integrated 7,014 pieces of equipment transferred from the Active Component to the Army Reserve.
- Identified \$742 million of Army Reserve stay-behind equipment retained in Iraq for replacement (such as HMMWVs, Trucks, Material Handling Equipment and communication equipment).



Equipping an Operational Reserve

- The modernization of light-medium trucks (75 percent are not Modular Force compatible or deployable and are not integral to training and operational efficiency).
- The modernization of medium line-haul tractors (50 percent do not support single-fleet policy and are not integral to training and operational efficiency).
- Modular Force equipment needed to support designated individual and collective training locations, including unit level collective training in a field environment.



Equipping an Operational Army Reserve

- Sustainment Issues:
 - Fully fund FY2013 force structure, including replacement of battle and attritional losses due to Operation Iraqi Freedom/Operation Enduring Freedom and the increased training tempo.
 - Recapitalize tactical truck inventory.
 - Retain Army Reserve tactical maintenance contract labor to reduce mobilization and training equipment backlogs.



Equipment Shortfalls Army Reserve Solution:

- Implementing Equipment Campaign Plan to work NGRE
- Continuing to execute \$92.0M for Depot Rebuild
- Implementing new Army Reserve Equipping Strategy
- Outsourcing Maintenance



The Centerpiece of the Army Reserve



The American Soldier!



Questions?

The US Army Transportation Corps TWV Transformation

NDIA Tactical Wheeled Vehicle Conference

BG(P) James E. Chambers

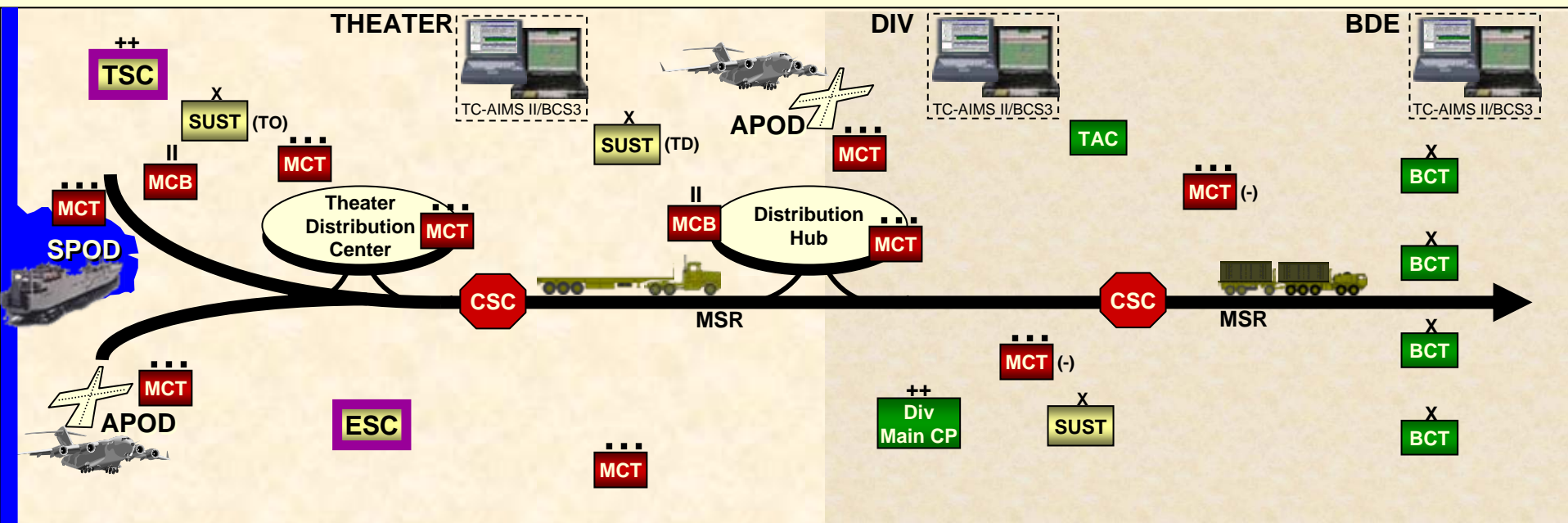
Chief of Transportation

Commanding General, US Army Transportation Center

Commandant, US Army Transportation School



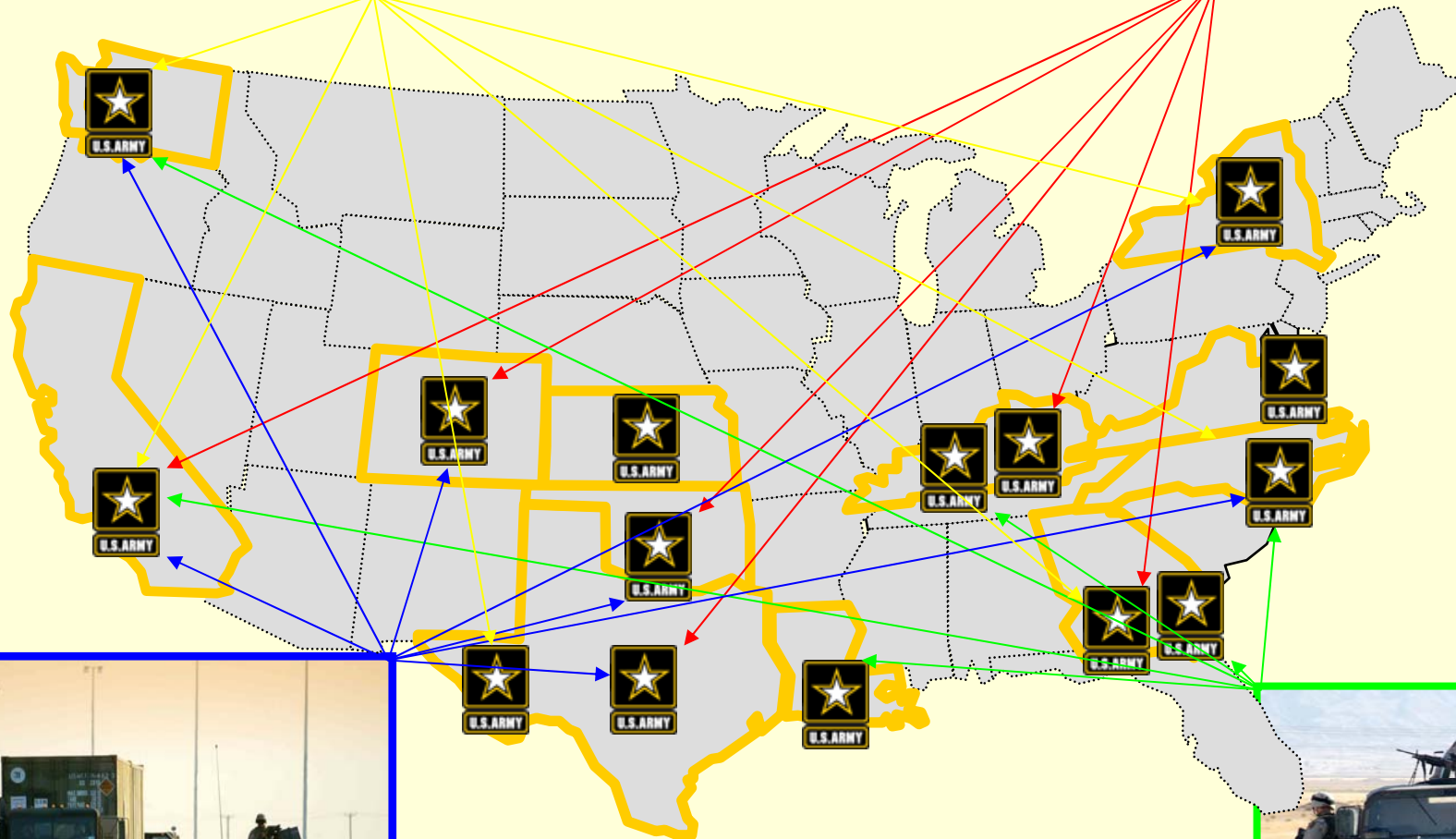
Logistics Transformation



	PAST	PRESENT	FUTURE
Doctrine	Force XXI	Modular Force	Future Force
Organization	Separate Movement Control & Materiel Management Centers	Theater Distribution Management Center	Global Distribution
Training	Branch Schools	Distribution Training Facility	Logistics University
Materiel	M915/HET M1/M2/3	FMTV/PLS/LHS/HET Stryker/M1/M2/3	Robotics/JLTV/MTV FCS/Stryker
Leader Development	Branch	Branch & Multi-functional	Certified Logistician
Personnel	Branch Specific	Increased Multi-functional	Joint Logistician
Facilities	Iron Mountain	Theater Distribution Hub	Inventory In-motion



MODULAR FORCE TRANSPORTATION STATIONING

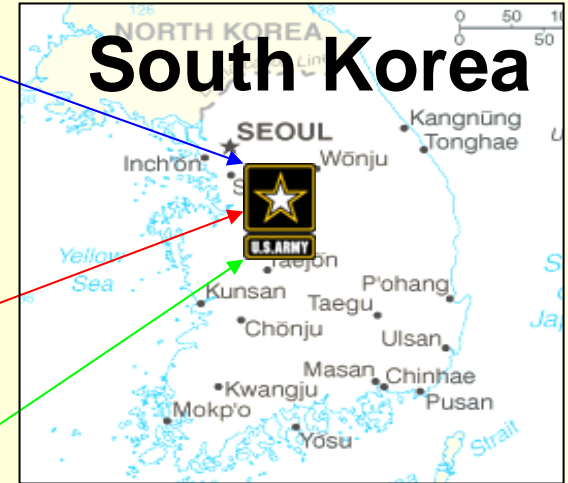


Depicts representation of vehicle locations

As of: 28 DEC 06



MODULAR FORCE TRANSPORTATION STATIONING



Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Assistance Trainer

Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Assistance



Motion-based Driver Trainer

Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Assist



Virtual Combat Convoy Trainer

Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Assistance

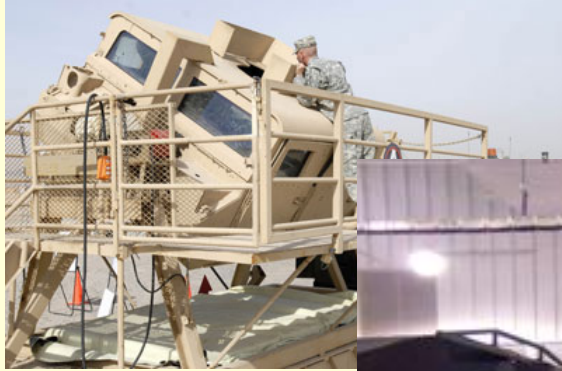


Combat Convoy Trainer



The Warrior Skills Trainer/EST 2000

Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Assist



Convoy Trainer



The Warrior Skills Train



Drivers Training Facility

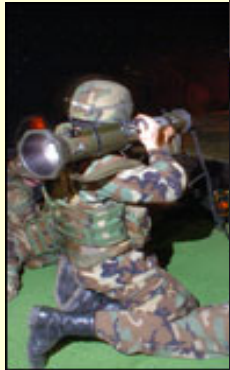
Advances in Tactical Wheeled Vehicle Training



HMMWV Egres



voy Trainer



The Warrior SK



SIMULATORS

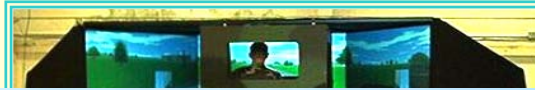
g Facility

Drivers Training Facility

Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Ascent Trainer



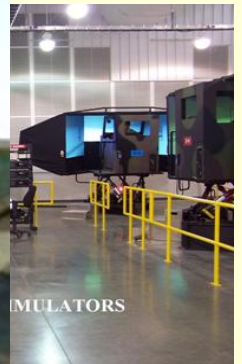
Vehicle Interior Trainer



The Warrior Skills Trainer



Convoy Live Fire Training



Simulators Facility

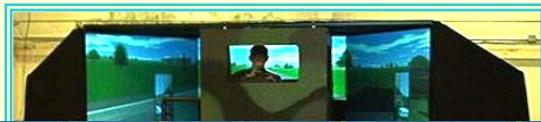


Drivers Training Facility

Advances in Tactical Wheeled Vehicle Training



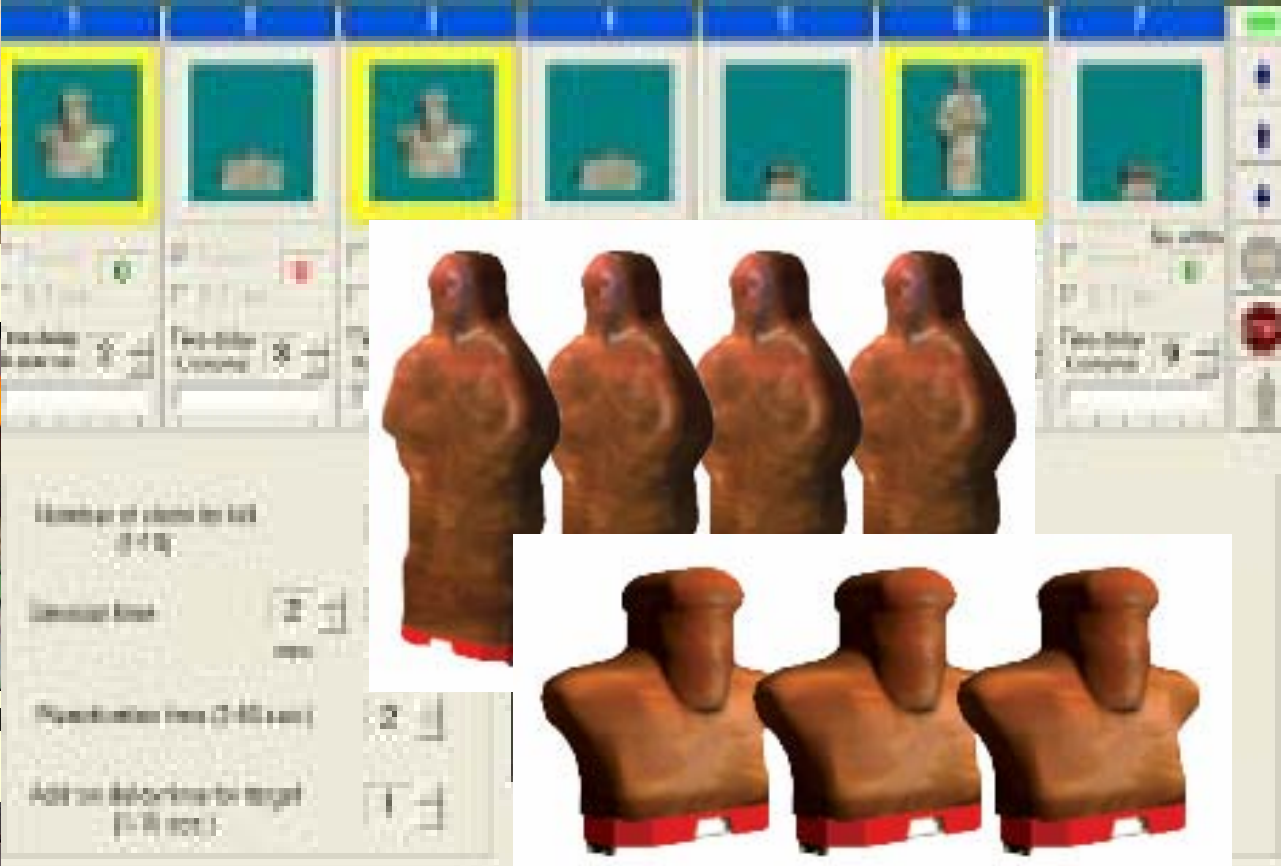
HMMWV Egress



oy Trainer



The Warrior Skill

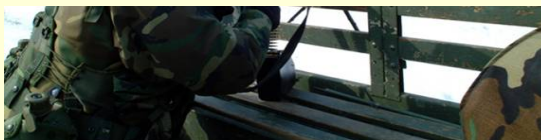


MULATORS

j Facility



Drivers Training Facility



Convoy Live Fire Training

Laser Convoy Counter Ambush Training

Advances in Tactical Wheeled Vehicle Training



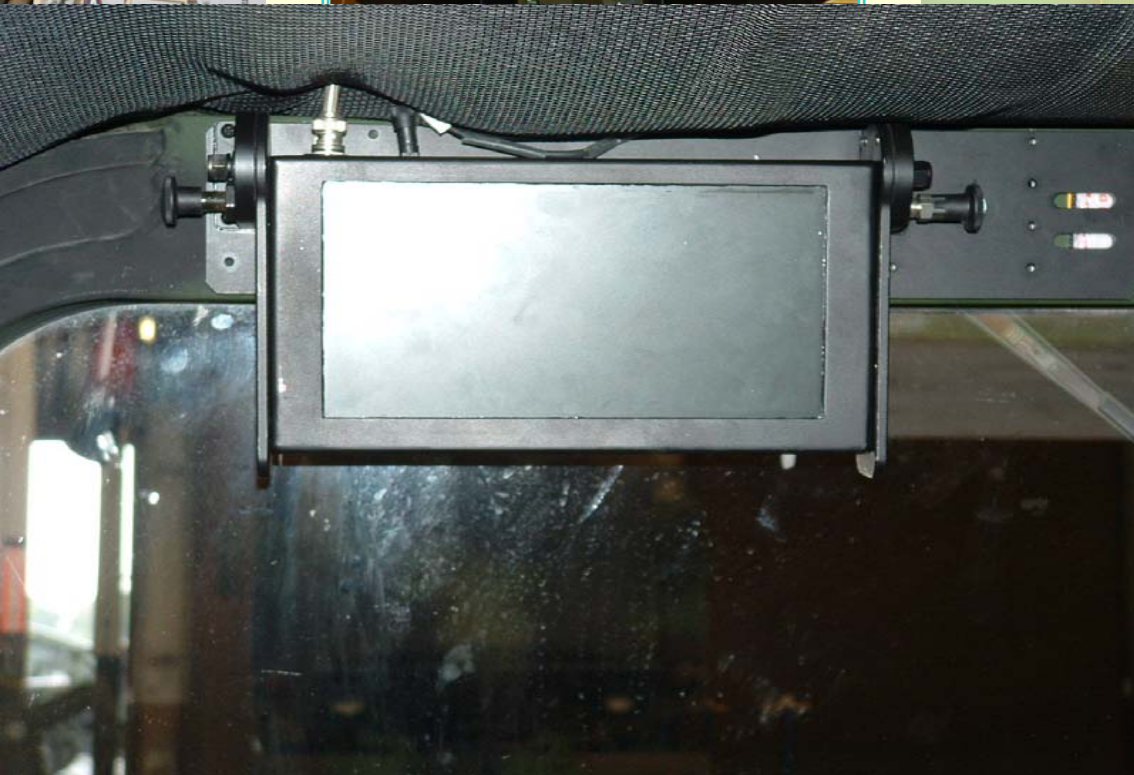
HMMWV Egress As



at Convoy Trainer



The Warrior Skills T

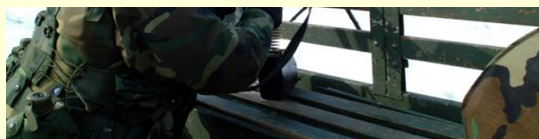


Training Facility

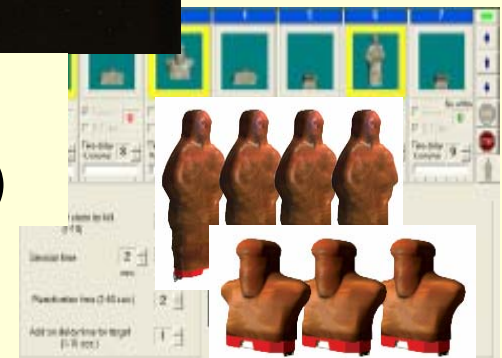


Drivers Training Facility

Driver Vision Enhancer (Night Vision Enhancer)



Convoy Live Fire Training



Laser Convoy Counter Ambush Training

Advances in Tactical Wheeled Vehicle Training



HMMWV Egress Assistance Trainer



Motion-based Driver Trainer



Virtual Combat Convoy Trainer



The Warrior Skills Trainer/EST 2000



**Driver Vision Enhancer
(Night Vision Enhancer)**



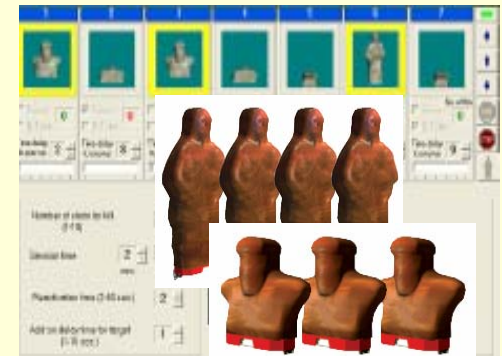
Drivers Training Facility



Drivers Training Facility



Convoy Live Fire Training



Laser Convoy Counter Ambush Training

A line of military tankers, likely M109 howitzers, is parked on a dirt road in a desert environment. The vehicles are tan-colored and equipped with large, rugged tires. The word "QUESTIONS?" is overlaid in large, white, bold letters with a black outline across the center of the image. The background shows a clear sky and some sparse vegetation on the left.

QUESTIONS?



USMC Ground Mobility

Information Brief to The 2007 Tactical Wheeled Vehicles Conference 5 February 2007



Brigadier General Conant
Director, Capabilities Development Directorate
Marine Corps Combat Development Command
Quantico, Virginia



Purpose

- Information brief on:
 - Overview of Strategic Planning Guidance (SPG) and USMC response.
 - Expeditionary Fighting Vehicle (EFV)/Joint Forcible Entry Operations (JFEO) requirements and risk.
 - Near term strategy for Mine Resistant Ambush Protected (MRAP) Vehicles.
 - Long term requirements development for USMC Ground Mobility.
 - Joint Light Tactical Vehicle (JLTV)
 - Marine Personnel Carrier (MPC)



OSD Ground Mobility Guidance

- **Task from Strategic Planning Guidance:**
 - **P. 10: “(U) The Marine Corps will consider capability alternatives for review by the DAWG to support a single two MEB forcible entry operation. Additionally, the Marine Corps will propose an appropriate mix of ground combat vehicles to support irregular warfare operations. (Suspense: May 1, 2006.)”**

***Overarching Defense Strategy:
“Shift from conventional to irregular capability.”***



Strategic Transformation & Implementation

- **Where we were: A general purpose force organized, trained and equipped principally for traditional threats.**
 - Approached irregular challenges as a subset of MCO.
 - Recent experience has highlighted the need for resources focused on irregular warfare.
 - QDR and SPG have directed a shift to irregular.
- **Where we are going: A general purpose force organized, trained and equipped for irregular and traditional threats.**
 - Risk: Accepting risk in strategic agility, while enhancing tactical capability.
 - Divestment: Divesting resources from EFV program.
 - Reinvestment: Reinvesting in mobility for irregular operations.



SPG Adjusted Ground Tactical Mobility

Traditional**Irregular**

Marine Corps Program of Record

- Supports OMFTS & Forcible Entry
- 1013 EFVs
- 11 $\frac{1}{3}$ Inf Bns Lift

**SPG**

SPG Adjusted 2 x MEB Forcible Entry + Appropriate Mix to Support IW

2 x MEB FE

- Supports JFEO/MCO
- 573 EFVs by 2020
- 8 $\frac{1}{3}$ Inf Bns Lift



MCO

- Supports MCO/IW
- 600 MPCs by 2018
- 3 Inf Bns Lift
- or*
- 6 Inf Bns Lift (MPC + JLTV)



GWOT

- Supports IW
- CTV/JLTV Family 825 by 2015 1375 by 2020
- Augments 16 Inf Bns . . . *and*
- 3 Inf Bns Lift (JLTV) . . . *or*
- 6 Inf Bns Lift (MPC + JLTV)

Current
3 x Amphib MEB
3 x MPF MEB

Accepting Risk
2 x Amphib MEB
1 x MPF MEB

Tactical Flexibility
MPC Co's
CTV/JLTV

Optimized for IW
JLTV Augmentation
MPC Surge Capacity

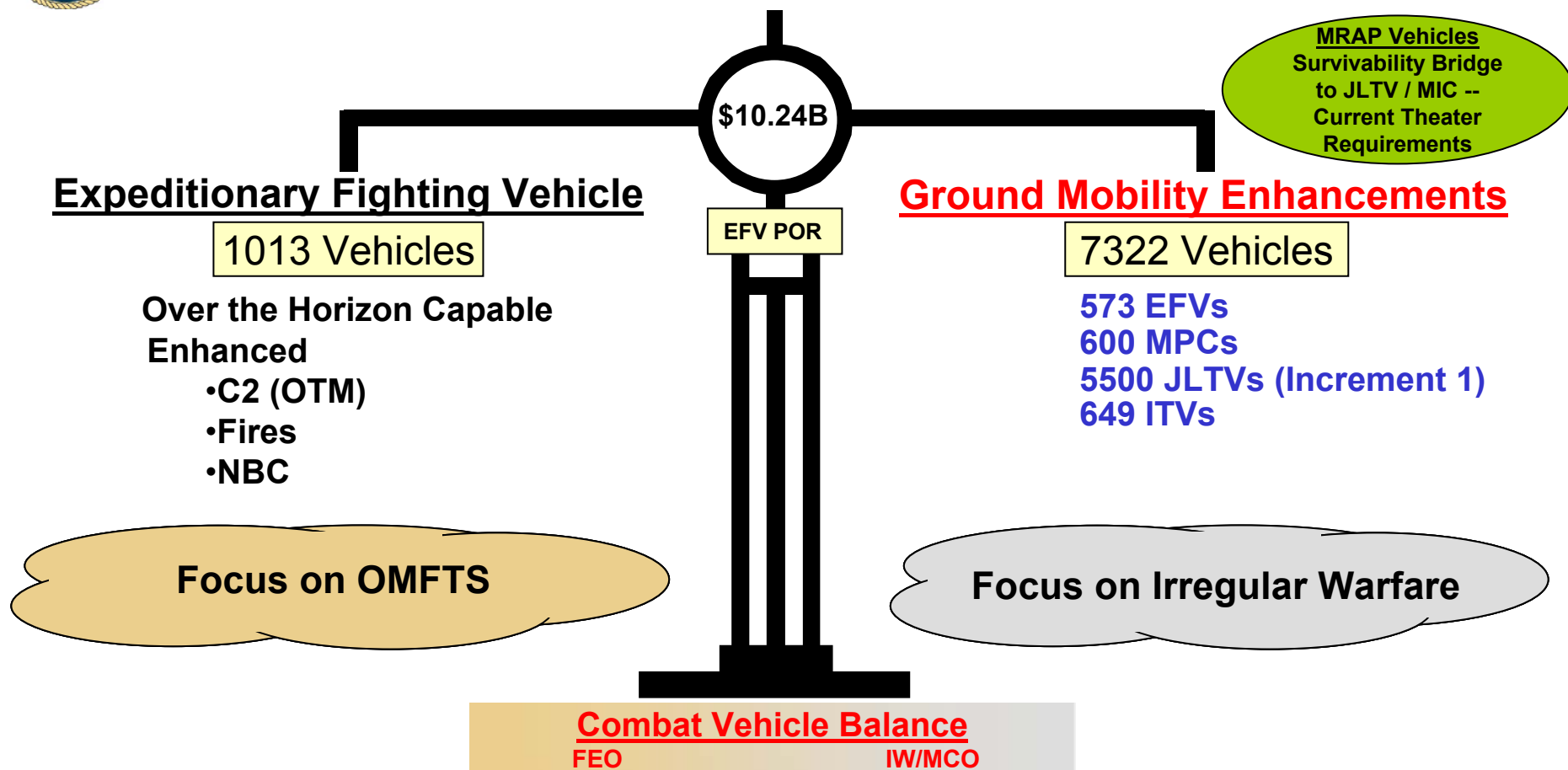
2006 POR
11 $\frac{1}{3}$ Bns Lift

2015 Goal
14 $\frac{1}{3}$ Bns Lift

2020 Goal
21 Bns Lift



Balancing Ground Tactical Mobility



- Shift to Irregular
- Enable Distributed Operations
- Increase Ground Tactical Mobility for GCE

- Increase Joint/Coalition Interoperability
- Enhance Force Protection

Ground Mobility Initiative -- Transforming the Force



Internally Transportable Vehicle (ITV)



Program Description

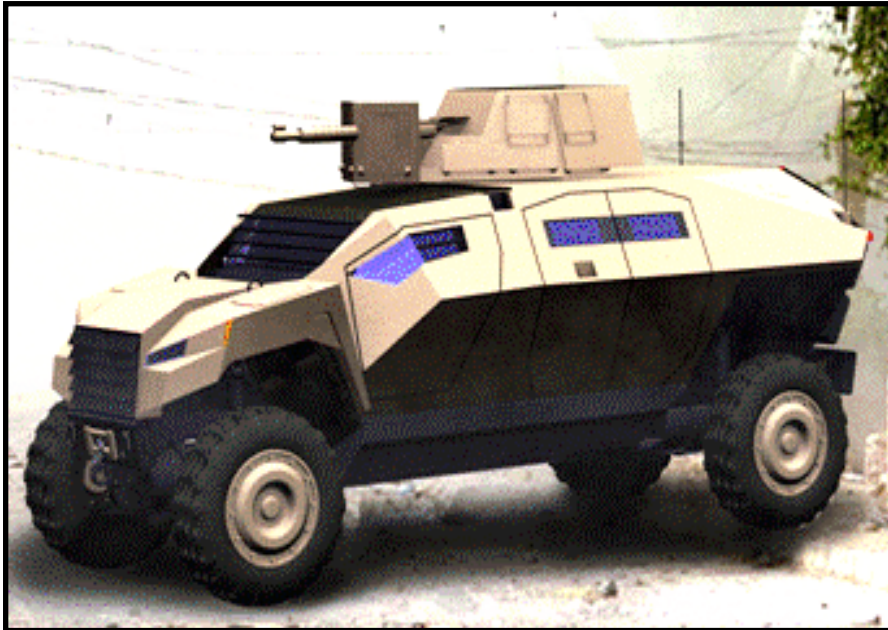
- The ITV will provide a deployed MAGTF with a ground vehicle that is internally transportable in the MV-22 tilt-rotor aircraft, CH-53, and MH-47 aircraft.
- The vehicle will serve primarily as a high mobility weapons-capable platform to support a variety of operations and provide enhanced mobility for Irregular Warfare.
- Supports DO Concept of Operations.
- Unit Cost \$120,000 as produced by GDLS.

Program Status

- Acquisition Objective = 649
- IOC: 2007
- FOC: 2011



Joint Light Tactical Vehicle (JLTV)



Program Status

- Acquisition Objective = 5,500 (Increment 1)
- IOC: 2012
- FOC: 2018 (Estimated)

Program Description

- HMMWV replacement vehicle (over time).
- Developing Gov owned Technical Data Package for the Combat Tactical Vehicle requirements set.
- JLTV Family of Vehicles with multiple Mission Role Variants (MRV) and trailers (Combat, Combat Support, Combat Service Support).
- Supports USMC Ground Mobility Initiative and USMC response to Strategic Planning Guidance shift to Irregular Warfare.
- Increased survivability, mobility, and sustainability in a networked environment.
- JLTV MOA with U.S. Army transitioning to Joint Program Office.



Marine Personnel Carrier (MPC)



Program Description

- The MPC is envisioned to provide General Support lift to USMC Infantry and Light Armor Battalions.
- Supports USMC Ground Mobility Initiative and USMC response to Strategic Planning Guidance shift to Irregular Warfare.
- Requirement will be fully defined through FY07 analytical effort via AoA and CDD.
- Will consider Gen II LAV(P), Stryker / Gen III and other COTS solutions.
- Striving for an expeditionary platform that balances the protection, payload, and performance attributes.

Program Status

- Acquisition Objective = 600
- IOC: 2012 (Estimated)
- FOC: 2016 (Estimated)



Mine Resistant Ambush Protected (MRAP) Vehicles



MRAP CAT I



MRAP CAT II



MRAP CAT III

Program Status

- Acquisition Objective = 3,594
- MROC validated requirement for 1,022 MRAP vehicles.
- Rqmt growth from 1,022 to 3,594 includes OIF UAH & MAK HMMWV replacement and supporting establishment allowance.

Program Description

- Current Theater requirement.
- V-shaped hull, higher ground clearance and a robust armor package yield a significant increase in force protection over the current tactical wheeled vehicle fleet.
- 3 Categories in the Family of MRAP vehicles:
 - **CAT I:** Mine Resistant Utility Vehicle (MRUV), urban operations, 6 PAX
 - **CAT II:** Joint EOD Rapid Response Vehicle (JERRV)/Cougar, multi mission (convoy escort, transport, ambulatory, EOD, Combat Engineer), 10 PAX
 - **CAT III:** Buffalo, mine/IED clearance operations, 6+ PAX
- 65 CAT II and 4 CAT III USMC MRAP in Theater.



Summary

- 43% reduction in EFV Acquisition Objective provides:
 - Forcible Entry (2 x MEB)
 - Irregular Warfare & MCO Capability Sets
- JLTV and MPC initiatives are the appropriate combat vehicles to support IW, MCO and JFEO.
- EFV program resource reinvestment to support JLTV and MPC is required to achieve SPG.
- MRAP vehicles provide survivability bridge to JLTV & MPC and meet current theater requirements.



Questions



Unclassified

Sustaining the Current Force & Improving the Future Force

5 February 2007

Lieutenant General Ann E. Dunwoody
Deputy Chief of Staff, G-4
Headquarters, Department of the Army



U.S. ARMY

CALL TO DUTY
BOOTS ON THE GROUND

Unclassified



Unclassified

Unclassified



CALL TO DUTY
BOOTS ON THE GROUND



CSA's Direction

GEN Schoomaker, HAC-D Testimony, 23 Jan 2007

"We are in a **dangerous, uncertain, and unpredictable time**. As we continue our mission worldwide and prepare to increase our commitment in Iraq, **we face challenges that exceed the level of demand envisioned** in the recent quadrennial review of defense strategy."

"The changed conditions of warfare necessitate that **we can no longer accept risk in how we equip our combat support and combat service support units**. There are no front lines in today's battle space. **We must equip all units with force protection, night vision goggles, crew served weapons, radios, and other critical items needed to operate.**"



CALL TO DUTY
BOOTS ON THE GROUND



What I Hope to Leave You With...

- ❑ We can no longer afford to accept risk in how we equip & sustain the Army
- ❑ Our leadership has gone to bat for more resources
- ❑ Our challenge is getting our arms around what we need
- ❑ Your challenge is giving our Soldiers the best industry has to offer



CALL TO DUTY
BOOTS ON THE GROUND

We Count On You To Make A Difference



Our Army

From

To

**\$56B
shortfall**

Tiered Readiness (Peace)
ALO'd Units
("Have's and Have Not's")

ARFORGEN

Cyclic Readiness (War)
Available And Ready Forces Ready To
Fight

Legacy Force
Division Centric

\$100

Transform

Modularity
Lethal, Agile, Deployable

\$10

\$5

\$1

OPTEMPO
Predictable Training Cycles

Equipment

High OPTEMPO
Increased Equipment Use By 4x

Ownership
Train & Deploy W/ Assigned Equip

Accountability

Stewardship
Army Owned, Unit Leased

Not Business As Usual...



CALL TO DUTY
BOOTS ON THE GROUND

Unclassified

Unclassified



Moving Out On All Fronts...

READINESS

Congressional support has provided the necessary *means* for the Army to undertake disciplined, orderly *ways* of reconstituting and resetting the force ensuring the *ends* of restoring and building combat power

\$17.1B

Have reset over 200,000 pieces of equipment and weapons

ARMY READINESS

*HAVE SUSTAINED OEF/OIF FOR 5 YEARS GROUND
EQUIPMENT READINESS > 85%*

INDUSTRIAL BASE PRODUCTION

*TWICE PRE-WAR LEVELS
GREATEST OUTPUT SINCE VIETNAM*

ARMY PREPOSITIONED STOCKS

*TRANSFORMED AND RESET APS-4 IN KOREA AND
APS-5 IN KUWAIT; SOURCE FOR SURGE*

LOG AUTOMATION FUNDING

*BUILDING A STATE OF THE ART ENTERPRISE
UP \$800M FROM FY 06 FUNDING*

OIF EQUIPMENT RETROGRADE

*FROM 3,496 VEHICLES TO 12,332
FY05 FY07*

SUSTAINMENT

*HISTORICALLY UNDERFUNDED BASE ROGRAMS
SUPPLEMENTAL FUNDING OF \$17.1 B FOR RESET*

PROPERTY ACCOUNTABILITY

*ACHIEVING CORPORATE VISIBILITY FOR \$230B
ENTERPRISE*

SUPPORT TO OTHER SERVICES

APPROXIMATELY \$193M IN DEPOT SUPPORT



CALL TO DUTY
BOOTS ON THE GROUND

Sustaining the Current Force & Improving the Future Force



Our Challenge =

Understanding
& Capturing
The Total
Requirements



Seeing And
Knowing
What We Have,
Who Has It &
What Condition
It's In



Holistic
Fielding,
Funding, &
Modernization
Strategy



We Cannot Accept Risk...



CALL TO DUTY
BOOTS ON THE GROUND



Increasing Demands

Unclassified

Adjust (Surge)

5BCTs + Enablers

Accelerate

1 HBCT + 1 IBCT

Grow

The Army by 74.2K

Convert

Remaining Legacy Force

Rebalance

Active/Reserve Components, Combat Arms, Combat Support, Combat Service Support

Reset

Replace Damaged, Destroyed, War-weary Equipment

Modernize

From 2 1/2 Ton 800 Series Trucks To Future Combat System

Mobilize and Deploy

National Guard & Reserve; Active Duty

Preparing For
This War And
The Next

Driving Requirements Up



CALL TO DUTY
BOOTS ON THE GROUND

Unclassified



Living Thru the Perfect Storm

Not Knowing What We Have...

Unclassified

Deployment equipment lists

Limited Wartime
Accountability

Attached and detached units

Theater Provided Equipment

RFI and REF

New Equipment Fielding

Credit Cards

Operational Needs Statements

COTS

Left Behind Equipment

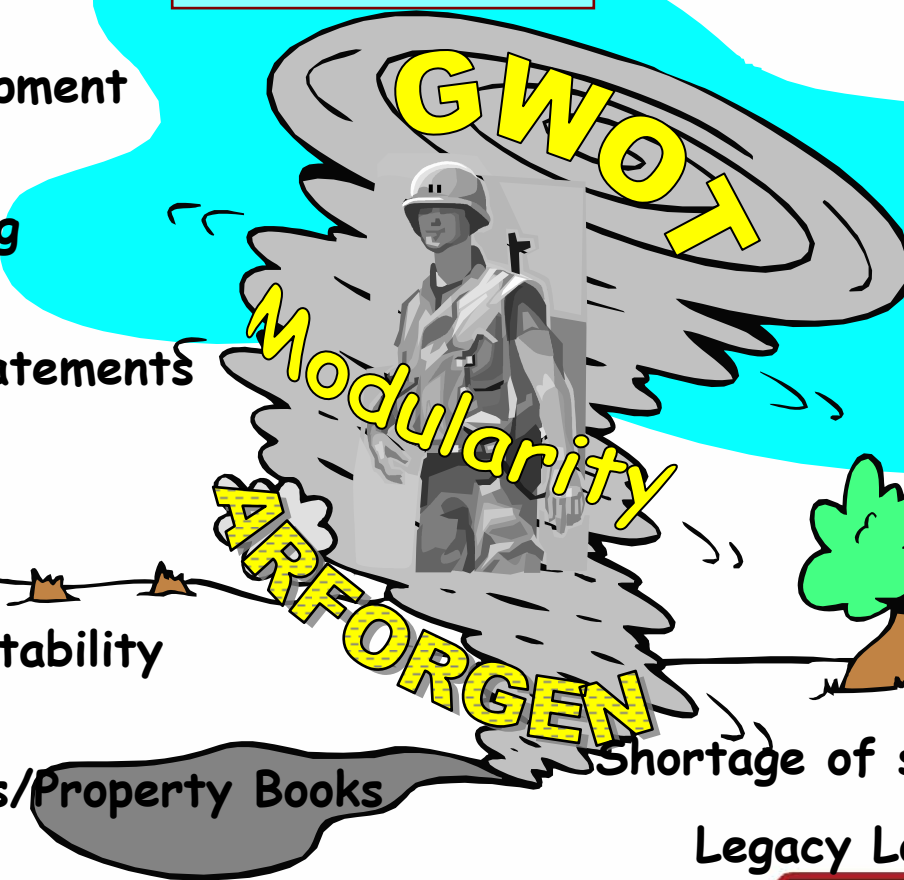
Sensitive Item Accountability

Multiple Hand Receipts/Property Books

Shortage of supply specialists

Legacy Logistics Systems

Thousands of Property Transfers



CALL TO DUTY
BOOTS ON THE GROUND

Unclassified

Equipping Success Had Unintended Consequences



Recovering from the Perfect Storm

Getting After It...

Operation
Total Recall

Unclassified



CORPORATE VALUE

FROM \$124B TO \$230B



OPERATION TOTAL RECALL PHASE I

2269 WEAPONS/NVD FOI NOW VISIBLE IN PBUSE



DATABASE CLEANSING

FROM 872K INVALID ENTRIES TO 0



CONTAINER MGMT / RETROGRADE

FROM \$13.1M TO \$2M IN DETENTION COSTS



CENTRAL ISSUE FACILITIES

FROM \$1.5B TO 2.3B VALUE VISIBLE IN CIF-ISM
\$10M IN EXCESS USED TO OFFSET NEW BUYS



LEAN SIX SIGMA / LOG POLICY

FROM 450 DAYS TO 115 DAYS TO CHANGE POLICY
FROM 24 STEPS TO 10 STEPS



READINESS - AMC MANAGED LINS

FROM 4700 LINS TO 300-400 LINS;
ELIMINATED 900 USR LINS THAT WERE S4 RATING



CORPORATE VISIBILITY

FROM 21.8 M TO 3.4B ITEMS VISIBLE



FINANCIAL LIABILITY

FROM \$850M TO \$767M; \$83M COST AVOIDANCE



LOG AUTOMATION FUNDING

FROM FY06 FUNDING - UP \$800M
STILL NEED \$1.1B



PBUSE FUNDING AND FIELDING

FROM \$0 TO \$ 58M IN FUNDING;
FROM 0-33% FIELDING TO TDA PBOS



DEPLOYMENT TIMELINES

FROM 120 DAYS TO 90 DAYS



RAPID FIELDING INITIATIVE

FROM 0 TO 70% OF 850K LINS VISIBLE (CIF-ISM / PBUSE)



ARFORGEN - SUBSTITUTE LINS / REGS

FIXING REGULATIONS TO ACCURATELY REFLECT READINESS
REPORTING; ELIMINATING INNACURATE REPORTING FOR
OBSOLETE EQUIPMENT (OVER 20K TRKS/NVGS)



IMPROVING / ON SCHEDULE



HOLDING STEADY



NOT IMPROVING / NO ACTION TAKEN



CALL TO DUTY
BOOTS ON THE GROUND

Gaining Visibility Over Our Enterprise

Unclassified



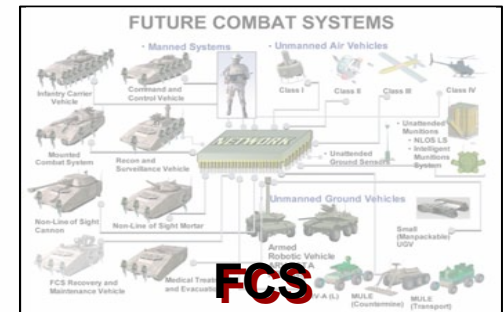
What We Need From You...

The Best Industry Has to Offer

Our Equipment Must Be:

- ❑ Safe
- ❑ Reliable
- ❑ Maintainable
- ❑ Supportable
- ❑ Trackable

**Soldiers' lives
depend on it**



And Most Importantly Protect Our Soldiers



CALL TO DUTY
BOOTS ON THE GROUND



Let's renew our commitment to America's most treasured asset...

Soldiers are the centerpiece of our Army
Living the Warrior Ethos - on duty protecting the
Nation and the society they serve.



CALL TO DUTY
BOOTS ON THE GROUND



Questions?



CALL TO DUTY
BOOTS ON THE GROUND



Where We've Been

Success: Army Logistics Transformation



Sep 04—TSC Design Approved



1st, 167th, 8th TSCs Stood Up in FY06



Nov 04— ESCs, Sus Bde Designs Approved



5 ESC/ 11 Sus Bdes as of Sep/06



Dec 04—Joint Capable Concept of Support Approved



Employing Concept Today



Jul 05—ARFORGEN Approved



Executing Now



Oct 05—Review DOL Functions (IMA/AMC)



Maint Functions Transferred Oct 06



Feb 06—ASC Concept Design Approved



Stood Up 22 Sep 06



Jun 06—Army Service Uniform Approved



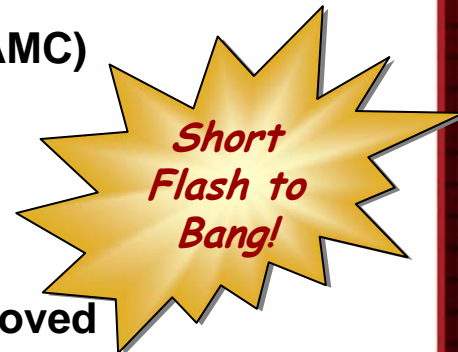
Available 4th Qtr FY 07



Aug 06—SDDC ADCON to AMC



Approved Oct 06



*Short
Flash to
Bang!*



CALL TO DUTY
BOOTS ON THE GROUND

Accelerating The Momentum Of Logistics Transformation



Force Projection ~ *Project Management Office*



MISSION

Develop, acquire, field, and support materiel solutions that optimize the "System of Systems" approach to project and sustain joint forces worldwide.

OTHER SIGNIFICANT PROCUREMENT EFFORTS

- Add-on-Armor Construction/ MHE Equipment
- Route Clearance Vehicles
- Aerial Delivery (JPADS)
- Water Bottling

Project Manager

COL Timothy G. Goddette

(Incoming - COL Steve Myers)

Deputy PM Acquisition: Ms. Patricia Plotkowski

Deputy PM Logistics: Mr. Dan Lorentz

Deputy PM Technology: Mr. Fred Balling

PRODUCT MANAGERS

- Assured Mobility Systems
 - ◆ PM, LTC Jerry Winberry (ARNG)
- Army Watercraft Systems
 - ◆ PM, LTC Philip Schoenig
- Combat Engineering, Material Handling Equipment
 - ◆ PM, LTC (P) Carol Solesbee (ARNG)
- Petroleum & Water Systems
 - ◆ PM, LTC Michael Receniello (USAR)
- Force Sustainment Systems
 - ◆ PM, LTC Craig Rettie
- Product Line Management Office
 - ◆ LTC Marc Wilson (USAR)



Programs



Mine Protection & Route Clearance Vehicles



- ◆ Buffalo MPCV
- ◆ IVMMDD
- ◆ JERRV MMPV
- ◆ RG-31 MMPV



Bridging Systems



- ◆ BEB
- ◆ CBT → LHS
- ◆ DSB
- ◆ IRB
- ◆ REBS



Combat Equipment



- ◆ Add-On-Armor
- ◆ IHMEE
- ◆ Family of Loaders
- ◆ ATEC
- ◆ DOZER
- ◆ Grader
- ◆ HyEx



Material Handling Equipment



- ◆ 4K Forklift
- ◆ 6K Forklift
- ◆ ATLAS
- ◆ RTCC
- ◆ RTCH





PM Force Projection~ Significant Accomplishments 1QFY06-1QFY07

ADJUST:

- Accelerated the transition of Mine Protected Vehicles PEO AMMO and JIEDDO/Marine Corps by 6-months
- Within a 6 month period, improved MPV Operational Rate from 70% to 85-90% while inventory increased 68.3%
- Contracted, tested, produced and fielded (\$85.8M) AoA kits with 50% SLEP/RESET in CONUS, to include 13 CE/MHE systems across the Army, Navy and USMC
- Established a RESET management office with the TACOM ILSC PSID and TARDEC to optimize resourcing decisions across the product life cycle resulting in \$219M in FY07
- Received 25% of available TACOM SSTs funds

SUSTAIN:

- Supporting the war fight; continuing production; managing fleets; modernizing and enabling the modular force
 - Processed 513 Contract Actions, 51 Milestone Decisions with 22 personnel changes (hiring, retirement, promotion, transfers in/out) out of 107 personnel
 - Established Fleet Planners in both PAWS and AMS
 - Find opportunities to build jointness into each Product Line
 - 25% reduction in Travel (\$500,000)

**7 SSEBs in
FY07**



Supply & Demand



Resource Management



Human Capital:

- ◆ Core: 107
- ◆ DS Matrix: 218
- ◆ Military: 18
- ◆ # of "P" Forms Submitted: 78
- ◆ # of Core/Matrix Personnel per "P" Form: 4

LCMC Team



Overtime:

- ◆ Overtime Hours FY05 – 3,593.93 = 1.72 Man Years
- ◆ Overtime Hours FY06 ~ 34,794.28 = 16.73 Man Years

PM Challenge: RESET and RE-ISSUE

- ◆ HMMWV: High Density Fleet Walk Away – Throw Away
- ◆ MPV: Low Density Fleet Walk Away – Fix (Repeat)



Before



After



Bottom Line: Sustainment is Different for Low Density Systems



Low Density Sustainment



● RCV Contractor Logistics Support (CLS)

- ◆ Push Robust ASL and Repairs Forward (ALT & Transport)
- ◆ Quarterly Analysis of Parts – “Make Adjustments”
- ◆ Consolidate Repairs (JERRV with RCV’s)
- ◆ Facilities and Tools to do the job
- ◆ Jointness still a challenge

● Lean6Sigma (Organic)

- ◆ Lack of standardized contract logistics scopes and deliverables
- ◆ No up-front reassessment of logistics support decisions
- ◆ Lack of routine registering of field issues and sharing of information / Inadequate configuration control process
- ◆ Lack of standardized procedures and training for logistics managers (Pubs & Provisioning)
- ◆ DLA processes not sensitive to needs of Low Density (non-demand supported) systems



Support Partnership Initiatives



Laundry Advanced System (LADS)



- Mobile Field Laundry System for Quartermaster Field Service Companies (FSC)
- Transitioning From CLS to DLA
- AAO: 164
- Total Parts: 2000+
- High Risk Parts: 189
 - ◆ **DSC Philadelphia**
 - ◆ 90 Parts on DVD Contracts to Date
 - Includes 38 Parts on DVD Contract with OEM, Guild
 - ◆ Expect up to 20 DVD Contracts in Total to Support High Risk Parts

Lightweight Water Purifier (LWP)



- Five Modules (Control, UF, High Pressure Pump, RO, Chemical Injection), Four Service Pumps, Two 1,000 Gallon Tanks, & One 3kW TQG
- AAO: 380
- Total Parts:
- High Risk Parts: 275
 - ◆ **DSC Columbus**
 - ◆ Expect One DVD Contract with OEM, MECO
 - ◆ Awaiting Award

Initiatives At Sustainment Phase for These Systems
Need to Focus Future Efforts Earlier in Life Cycle



Support Partnership Initiatives



Buffalo Mine Protected Clearance Vehicle (MPCV)



- ONS Req: 80
- Total Parts: 4300
- ASL: 700

Interim Vehicle Mounted Mine Detector (IVMMD)



- ONS Req: 79
- Total Parts: 4500
- ASL: 837

JERRV Medium Mine Protected Vehicle (MMPV)



- ONS Req: 128
- Total Parts: 5200
- ASL: 464

RG-31 Medium Mine Protected Vehicle (MMPV)



- ONS Req: 321
- Total Parts: 5100
- ASL: 1193



Challenges and Impacts



- (A) “Joint” Plan to sustain MRAP Vehicles
- (L) Expertise in Provisioning and Publications lacking
- (T) JP8 Fuel Requirement & COTS Engine Technology Requirement diverging
- Jointness is usually a result of informal coordination
- Resourcing Decisions NOT in synch with ARFORGEN
- MOD Line’s needed to “Make Adjustments”, Budget for uncertainty



Questions?



ATEC Testing In Support of the War

James B. Johnson

U.S. Army Developmental Test Command

6 Feb 07



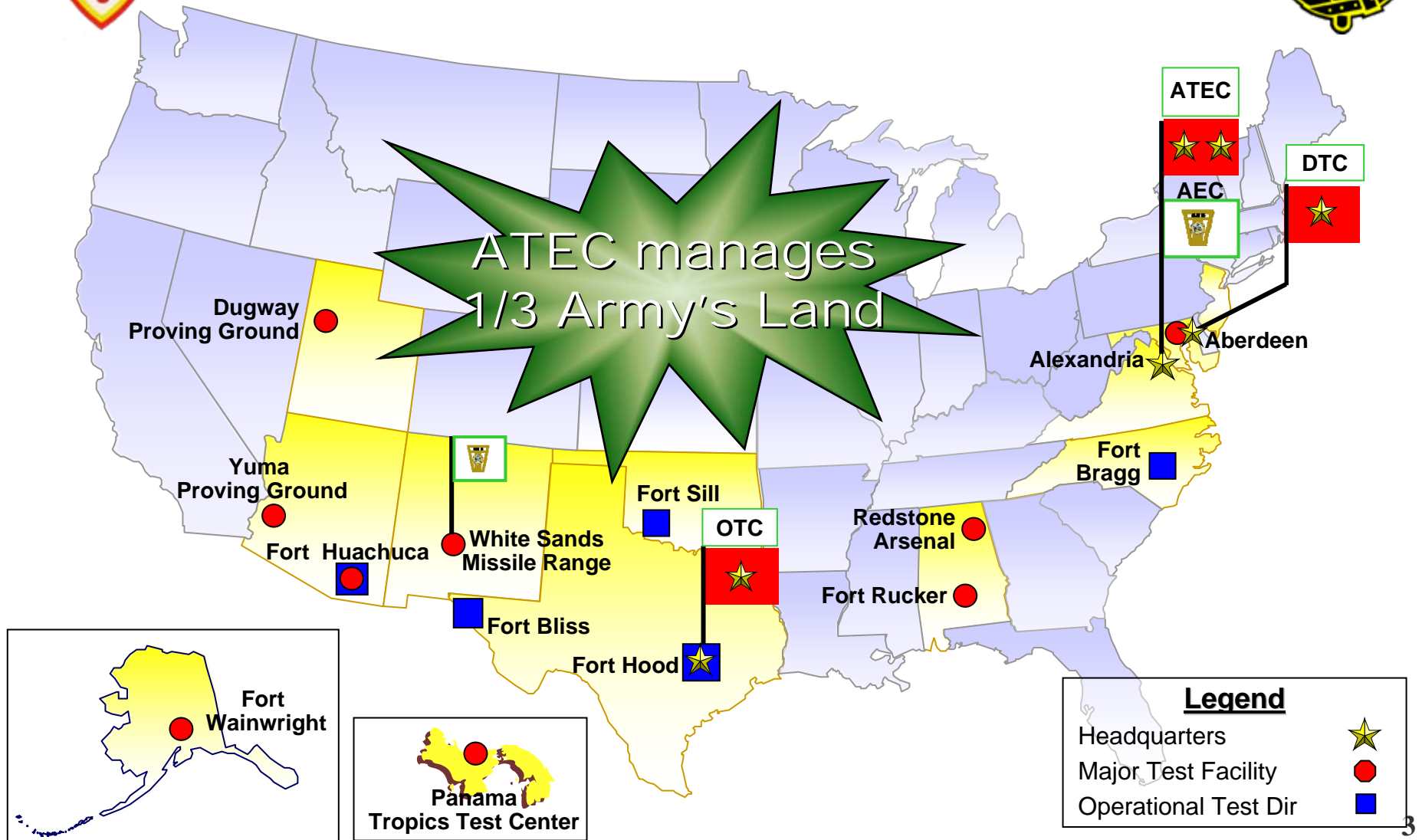
Understand Who We Are



- Full Spectrum Testing
 - ◆ All phases of testing; developmental, operational & evaluation
- Major Contributor
 - ◆ Testing and Evaluating over 400 systems
 - ◆ 1100 test events worked daily
 - ◆ ATEC Forward – Forward Operational Assessment Teams in Iraq & Afghanistan
- Large, complex organization
 - ◆ 8000+ personnel
 - ◆ 26 Locations, 17 States, Operate on 1/3 Army's Land mass...impacted by BRAC
 - ◆ Mostly reimbursable; competitive, efficient
 - ◆ \$5 Billion capital investment in facilities/instrumentation
- Value-added
 - ◆ Information for Army decision makers to ensure Warfighters have the right capabilities
 - ◆ Rapid testing in support of the Global War on Terrorism



Where We Are

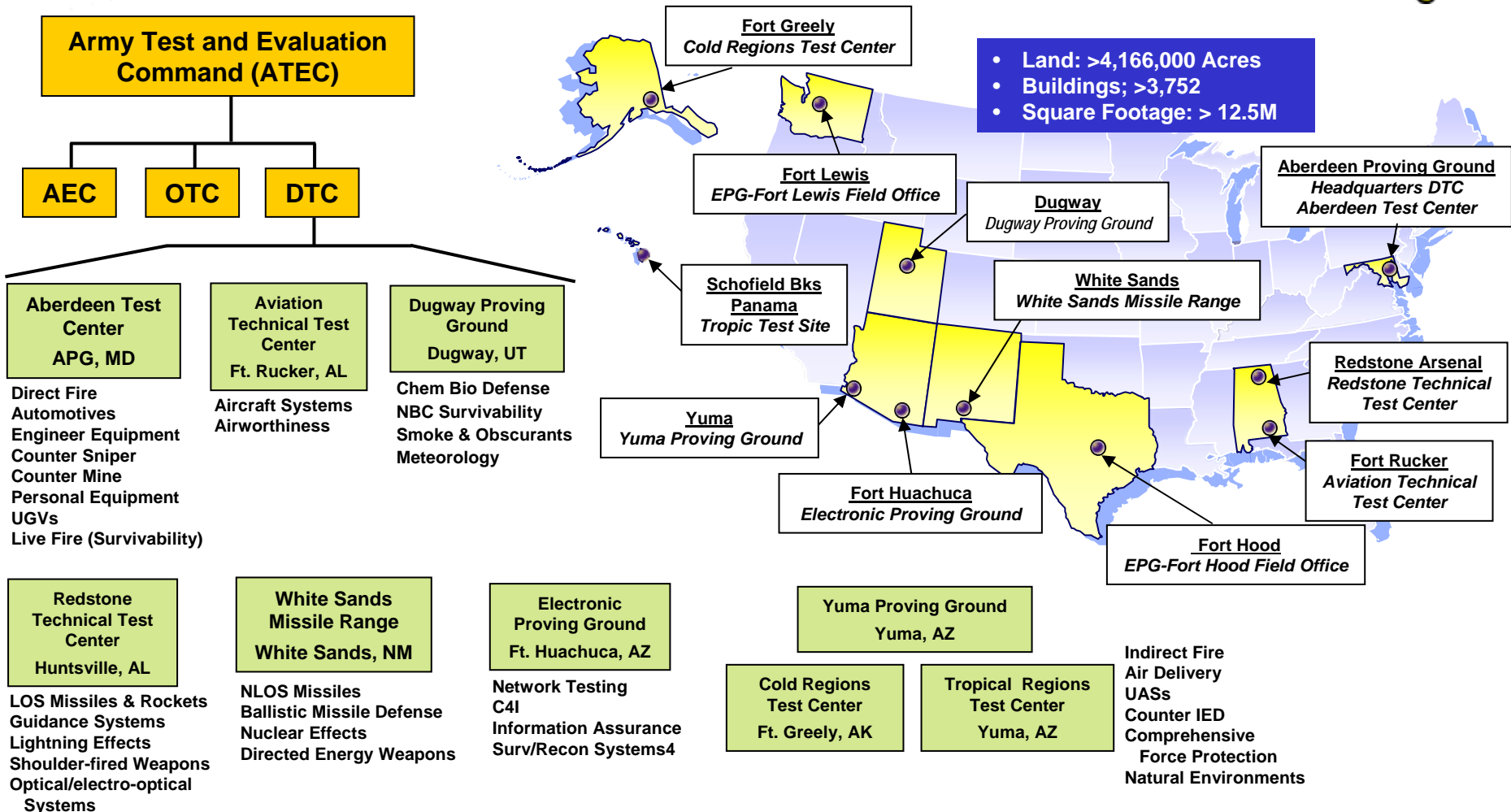




DTC – Who We Are



Ranges and Test Sites



Diverse test services to ensure effectiveness, interoperability, and safety



Items Being Tested by DTC



Mine Rollers



IED Defeat



Munitions Testing



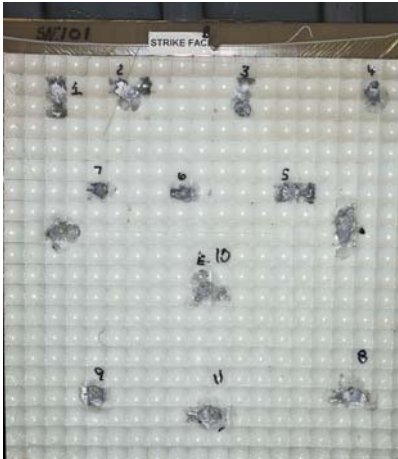
UGV





Tactical Wheeled Vehicle Up-Armoring Test Effort

Ballistic Testing



Coupons



Blast Mines



Roadside IEDs



Tactical Wheeled Vehicle Up-Armoring Test Effort

Automotive Testing



NATO Lane Change



Roadway Simulator



Brake Testing



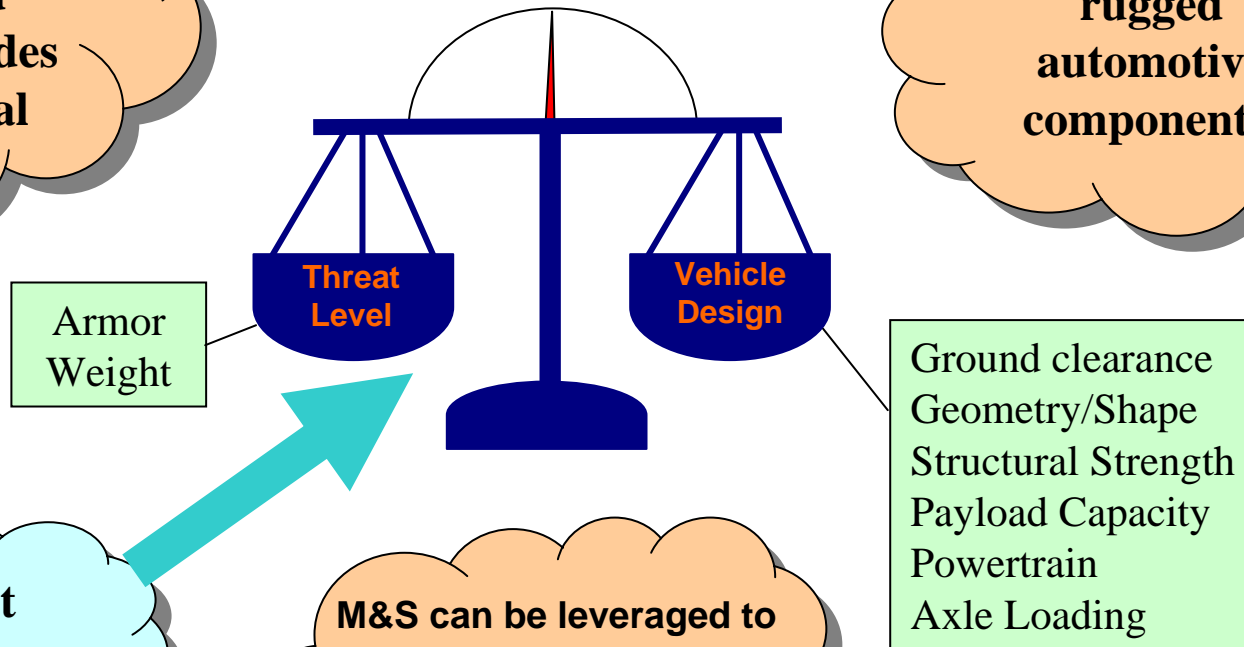
Tactical Wheeled Vehicle Up-Armoring Test Effort Trade-Offs



Consider armor weight and future upgrades during initial design.

Choose more rugged automotive components.

← Performance →



Vehicle must stay in balance.

M&S can be leveraged to

- Optimize armor design
- Make performance vs. Protection tradeoffs



Example of Successful Team Effort

(Long Term Armoring Strategy – LTAS)

- Classified ballistic performance specification developed up-front (PMO, ATEC, ARL).
- PMO hosted Industry day at Selfridge ANGB (29 Nov 05)
- IPT formed to coordinate T&E (PMO, OEM/subs, ARL, ATEC, others)
 - ◆ Design reviews open to IPT (forum to share ideas and work problems)
 - ◆ Army T&E and R&D communities had opportunity to provide input
 - Modeling to help optimize armor designs
 - Lessons learned from testing many systems (*Free Advice!*)



Advice / How We Can Help You



- Obtain security clearances (personnel and facility)
- Access to Developmental Test Command Proving Grounds
 - ◆ Thru PMO for Government Sponsored Programs
 - ◆ Testing for Private Industry
 - ▢ Design maturation/R&D (Controlled Access to data)
 - ◆ Requests for Test Services
 - ▢ Thru IPT Coordination Process
 - ▢ Direct Requests thru DTC website (www.dtc.army.mil)



Keys for Success



- Clearly Articulated Requirements
- Leveraging Previous Testing and Hardware in the Loop Simulation
- Early involvement of IPT members (team effort)
- Allocate realistic time and resources for T&E

*Testing is an
integral part of
the design
maturation
process!*



TWV Conference

“Sustaining the Joint Force/Improving the Future Force”

*MG
Mike
Lenaers*

*6
February
2007*



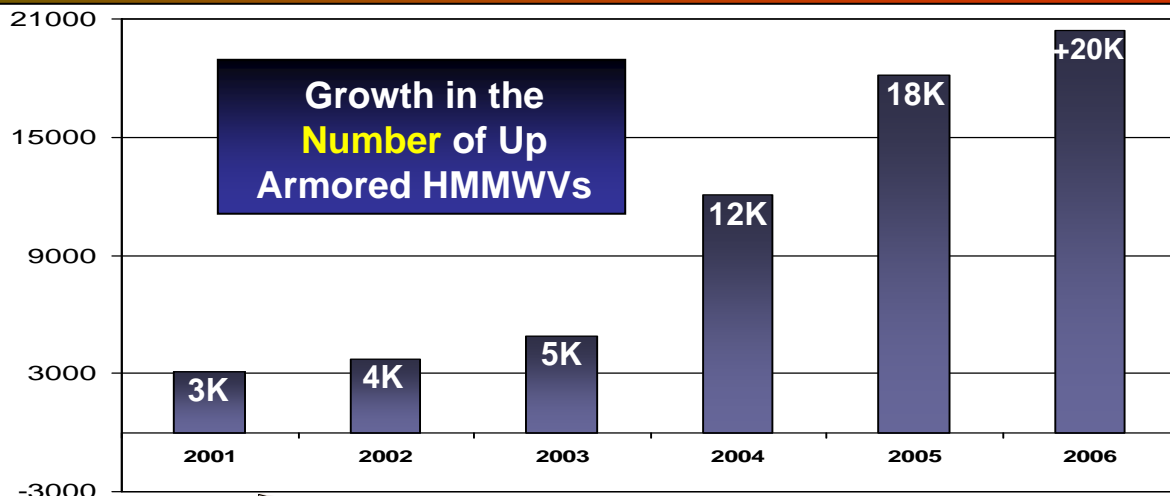
Unclassified

THE HMMWV ... *From Hummer to Groaner*

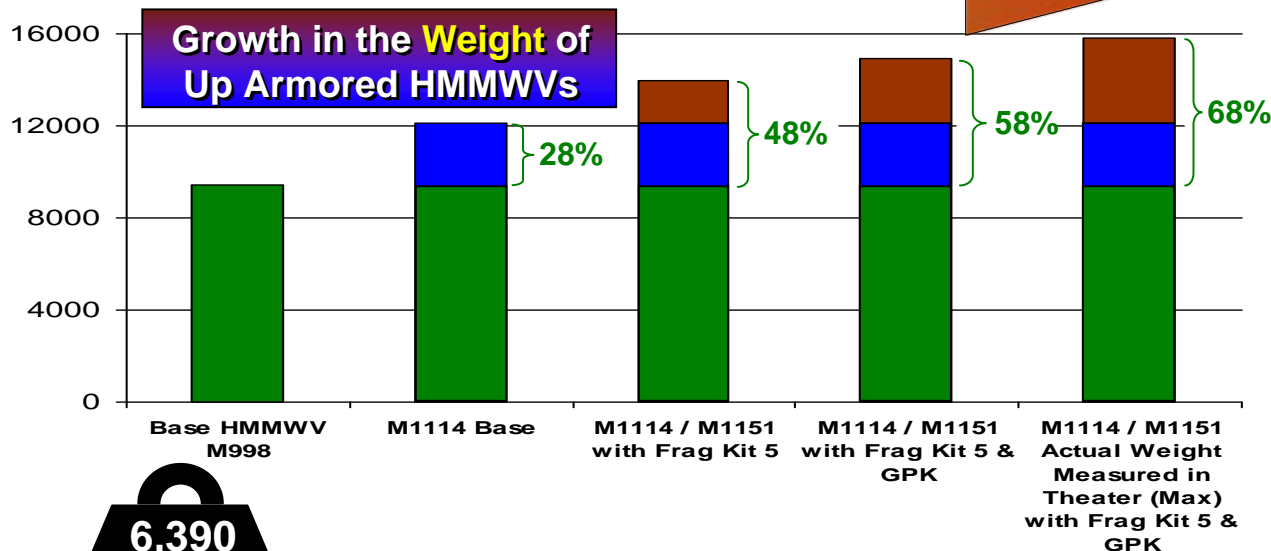
"HUMMER"



M998 HMMWV 4x4 High-Mobility Multipurpose Wheeled Vehicle



Mission Creep



**6,390
POUNDS
ADDED**

... **THAT'S OVER 2/3 OF AN ORIGINAL HMMWV**

"Groaner"



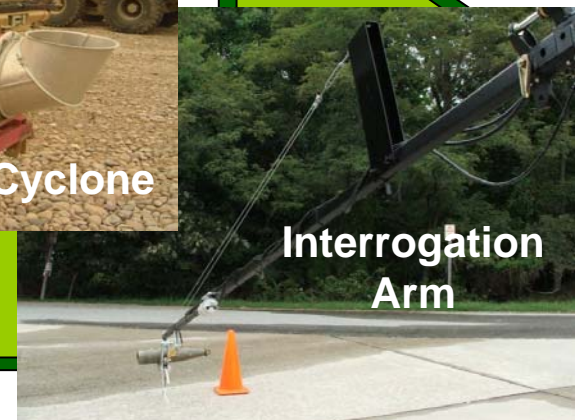
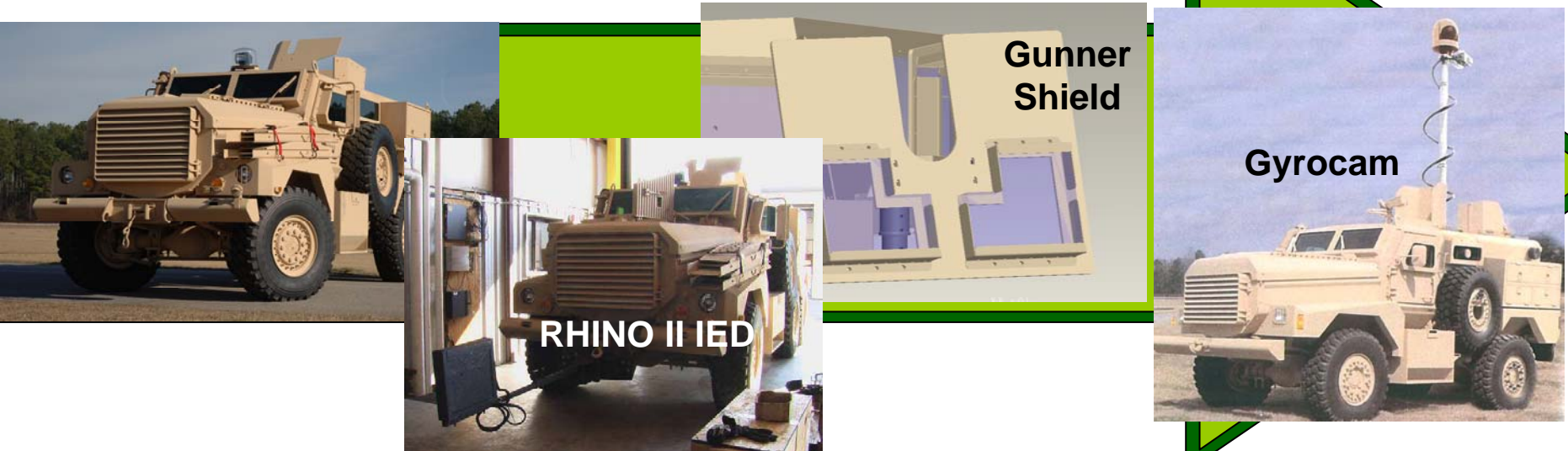
M1151A1 with the Objective Frag Kit 5



M1114 with the Objective Frag Kit 5



Mission Creep on All Vehicles



Unclassified



Made for OIF / OEF?

Works great here ...

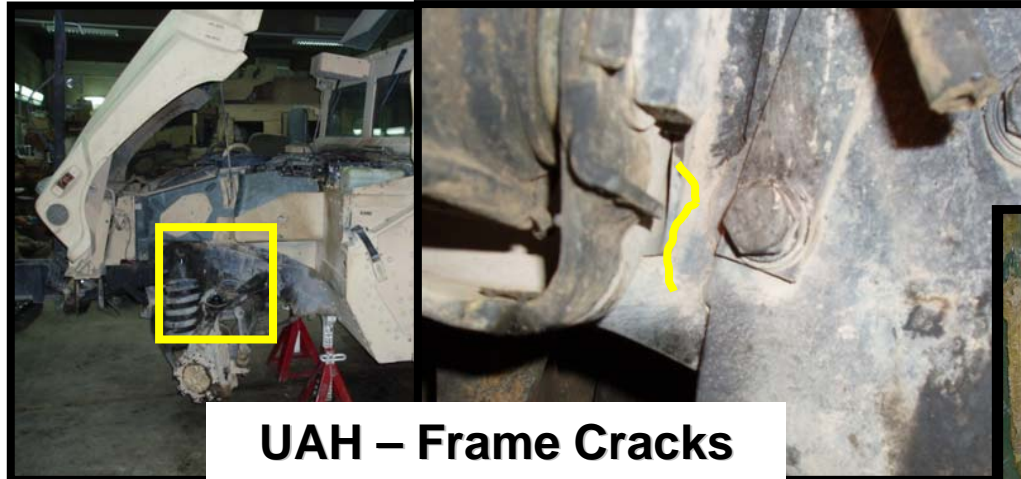


But what about here?



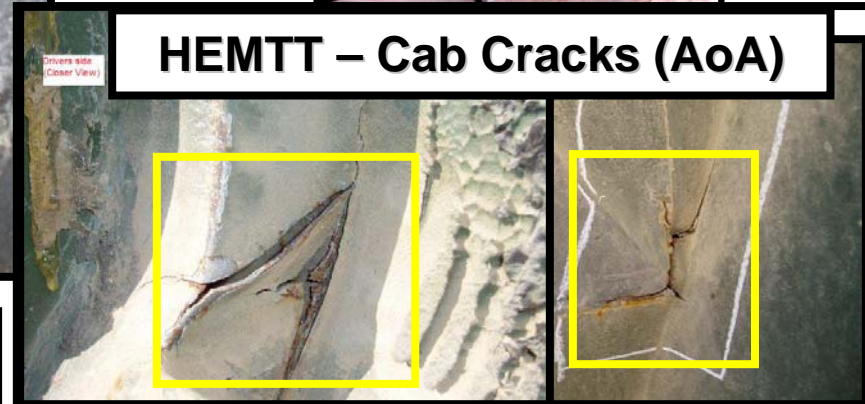
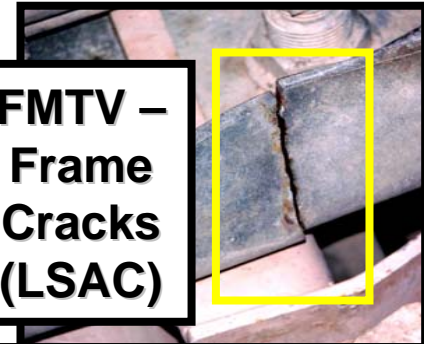


Failures

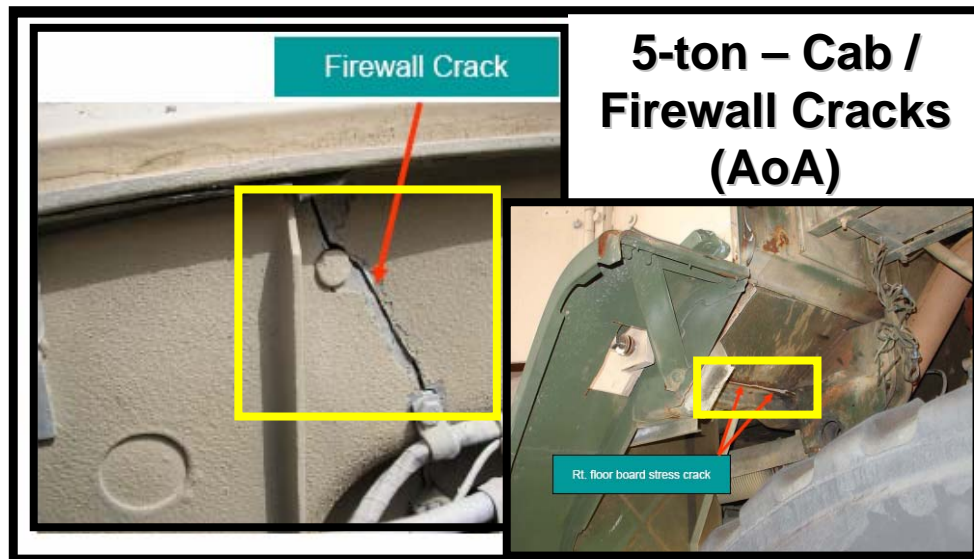


UAH – Frame Cracks

**FMTV –
Frame
Cracks
(LSAC)**



HEMTT – Cab Cracks (AoA)



**5-ton – Cab /
Firewall Cracks
(AoA)**

Firewall Crack

Rt. floor board stress crack



M915 – Cab Cracks (AoA)

01/28/2006



Refurbishing AoA Vehicles in SWA

➤ **HMMWV Vehicles**

- Desired Annual Refurbishment Rates:
 - 8.5% of fleet per year (1,800 HMMWVs per year)



Heavy Tactical Vehicles * **

- Desired Annual Refurbishment Rates:
 - HET system (M1070 Tractor and M1000 Trailer): 50% of Fleet/year (236 HET systems/year)
 - HEMTT and PLS: 25% of Fleet per year (741 HEMTTs and 387 PLS' per year)



➤ **Medium Tactical Vehicles * ****

- Desired Annual Refurbishment Rates:
 - FMTV: 25% of fleet per year (595 FMTVs per year)
 - M939: 25% of fleet per year (310 M939s per year)



➤ **Line Haul Tactical Vehicles* ****

- Desired Annual Refurbishment Rates:
 - M915s: 50% of fleet per year (686 vehicles per year)



* *Estimated: 70% Firm Fixed Price, 30% Time and Materials*

** *Three Request for Proposals and Three separate Four Year IDIQ contracts*

Keeping the Balance

Protection

M1114
W / FRAG
Kit 5 & GPK



Performance

Payload

Unclassified

Keeping the Balance

Protection

M1114
W / FRAG
Kit 5 & GPK



Performance

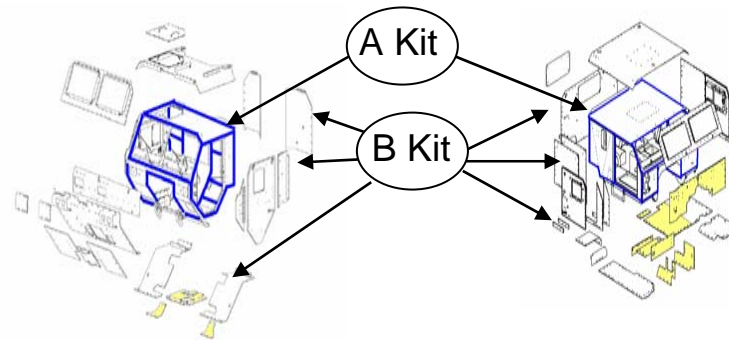
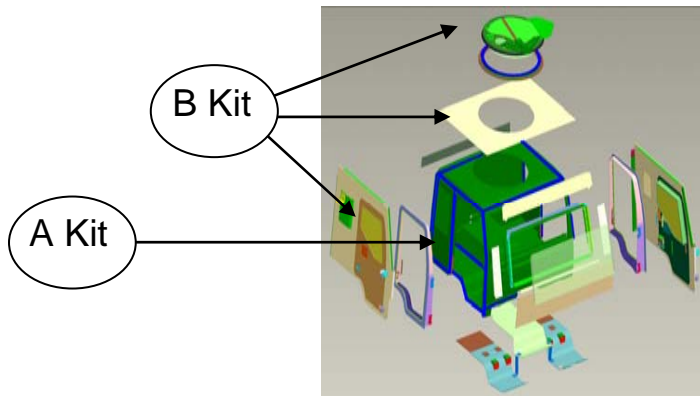
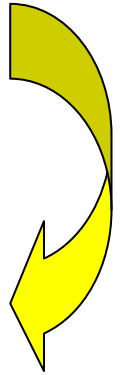
Payload

Unclassified



We will need to RESET Armored Vehicles upon return

- Can we go to a Long Term Armor Strategy during RESET?
 - What is the Cost?
 - Will we have the dollars?
- A Kit = Frame, Attachments, Hard to Install Armor, commo wiring, mounting points for Gunner's Protection Kit + will need non-Armor panels and glass (Install during RESET vs old cab)
 - B Kit = Armor Panels and Armor Glass





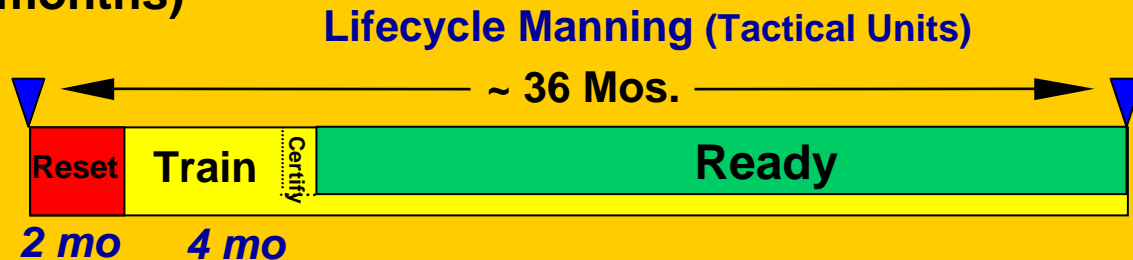
ARFORGEN

REQUIRES RAPID RESET BETWEEN CYCLES

- Align Soldier assignments with a unit's operational cycle (~36 months)

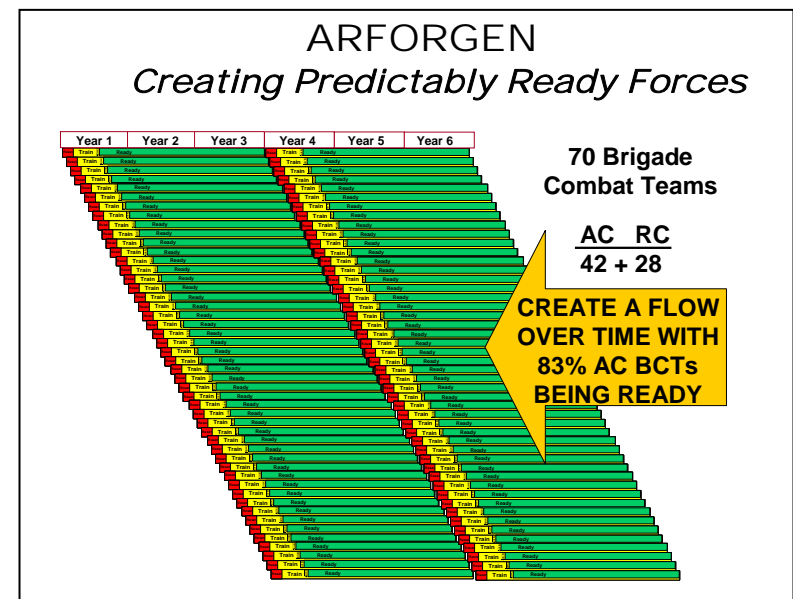
- Soldiers arrive, train, deploy, and depart together

- Improves cohesion and training effectiveness



CHALLENGES:

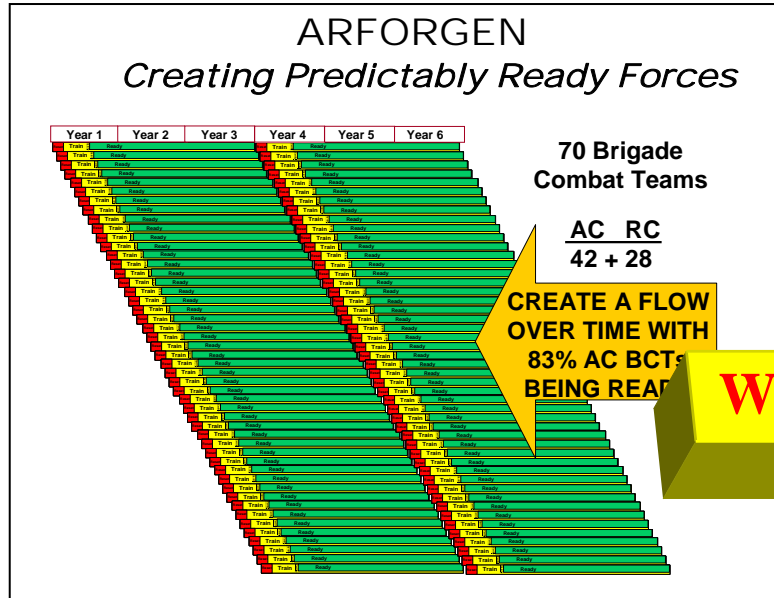
- Very short RESET window
- Soldiers not available
- Keep costs reasonable
 - Super – Service
 - Mandatory Parts Replacement
- Touch Units Once in 3 Years





ARFORGEN

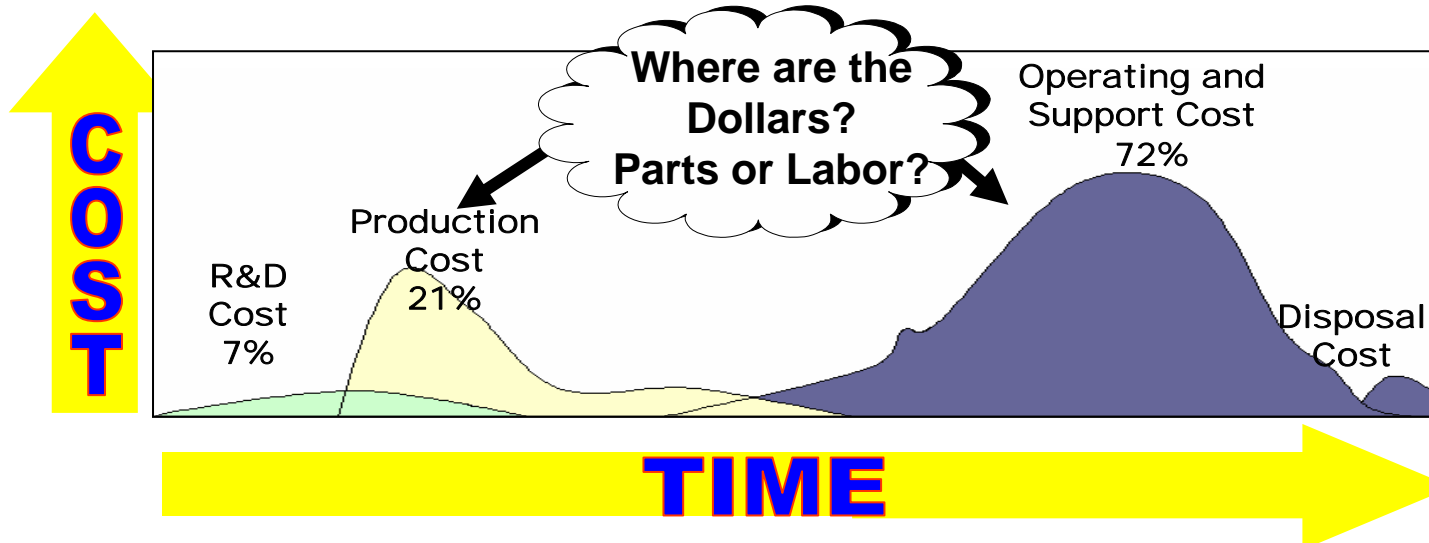
Reset Support... *a Continuing Requirement*



Opportunities:

**14 AC + 5 RC BRIGADES
RESET EACH YEAR**

Will provide predictability for RESET parts





PM HBCT Condition Based Maintenance (CBM+) Condition Based Readiness Analysis (CoBRA)

- Functional data from electronic control modules
- Platform sensors and Data
- Automatic data collection, storage and transmission (transparent to the unit)
- Unique item tracking to key components

Vehicle Configurations



- Maintenance and Logistics analytical tools and reports
- Correlate Maintenance actions with data collected
- Risk reduction with Fort Knox Fielding
- Establishes the foundation for the LCMC CBM+ Capability

Vehicle Configurations



FY06 Effort:

- Funded by \$7M RDTE Bill + \$3.2M Congressional Add
- Gets existing data off of data bus for analysis
- Completion of that analysis is unfunded - \$5M (FY08) Balance of original scope

“We appreciate your advice”





United States Army Materiel Command

Tactical Wheeled Vehicle

Supporting the Warfighter

**Lieutenant General
William E. Mortensen**

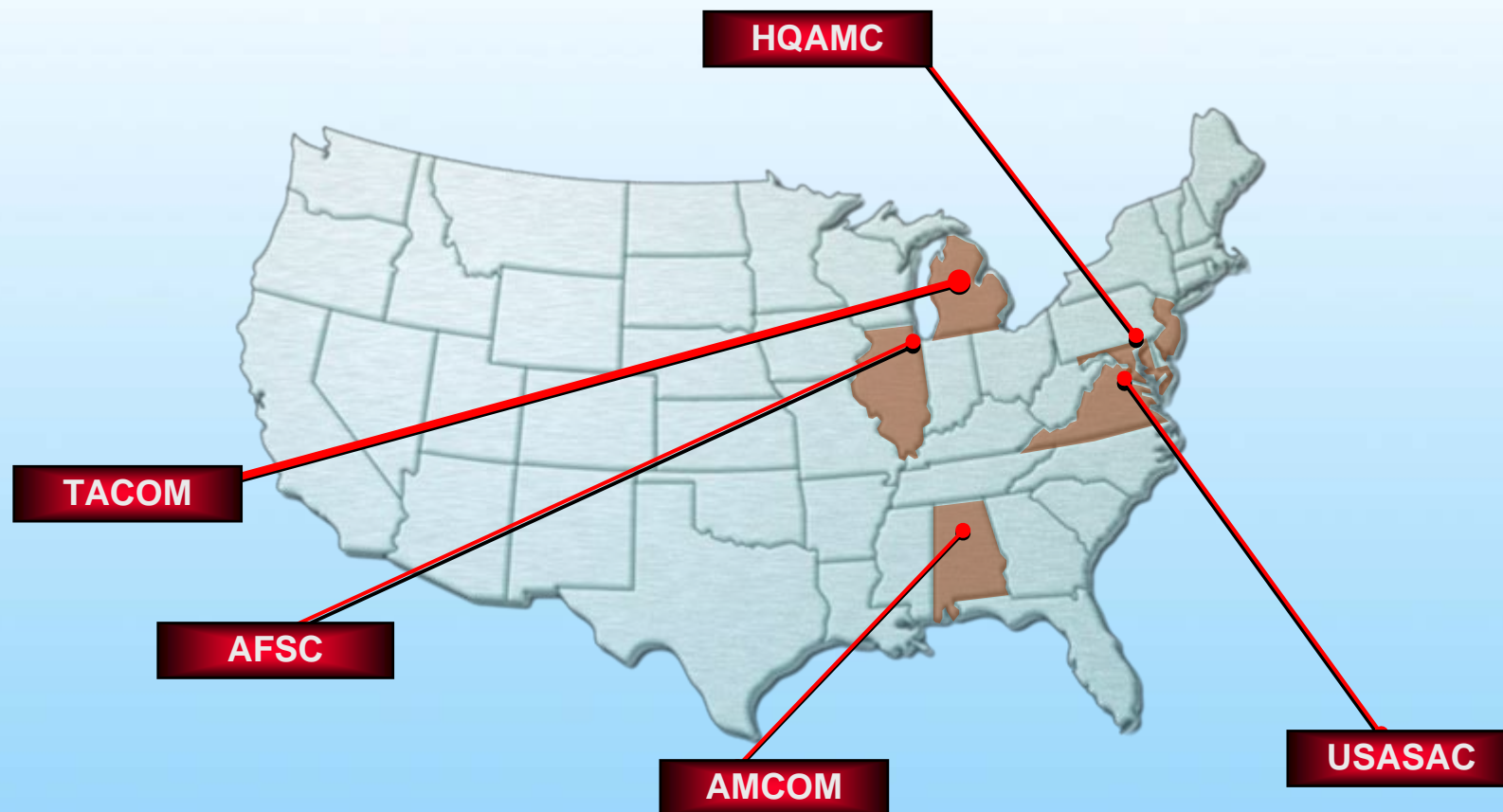
4 February 2007



“Need to be faster, more agile, less bureaucratic... Need to fight this every day”



Yesterday's AMC – Major Subordinate Commands



Today's AMC - Life Cycle Management Commands



Tank-automotive & Armaments Command LCMC

MG Mike Lenaers	Mr. Jack Dugan
	
Civilian 13,089 Military 94	

Army Materiel Command

GEN Benjamin S. Griffin	LTG William E. Mortensen	Ms. Kathryn A. Condon	CSM Daniel K. Elder
			
Civilian 820 Military 62			

Communications-Electronics LCMC

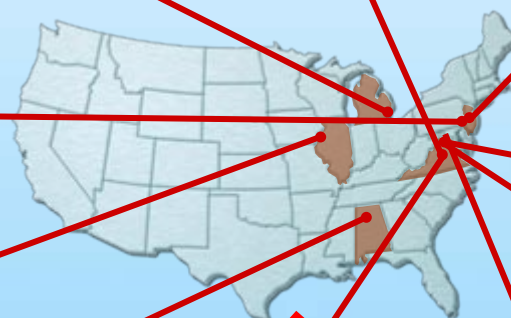
MG Michael R. Mazzucchi	Mr. Victor J. Ferlise
	
Civilian 7,192 Military 85	

Joint Munitions & Lethality LCMC

MG Paul S. Izzo	Mr. James Sutton	BG James Rogers
		
Civilian 4,402 Military 15		

Research, Development & Engineering Command

MG Roger Nadeau	Mr. David J. Shaffer
	
Civilian 11,815 Military 244	



Army Sustainment Command

MG Jerome Johnson	Mr. Scott Welker
	
Civilian 1,183 Military 696	

Aviation and Missile Command LCMC

MG James Pillsbury	Dr. Richard W. Amos
	
Civilian 8,623 Military 107	

Military Surface Deployment & Distribution Command

MG Kathleen Gainey	Ms. Patricia Young
	
Civilian 1,726 Military 169	

Chemical Materials Agency LCMC*

Mr. Dale A. Ormond (Acting)	Mr. Kevin Flamm
	
Civilian 2,432 Military 18	

US Army Security Assistance Command

BG Clinton Anderson	Mr. Rick Alpaugh
	
Civilian 560 Military 49	

* Proposed

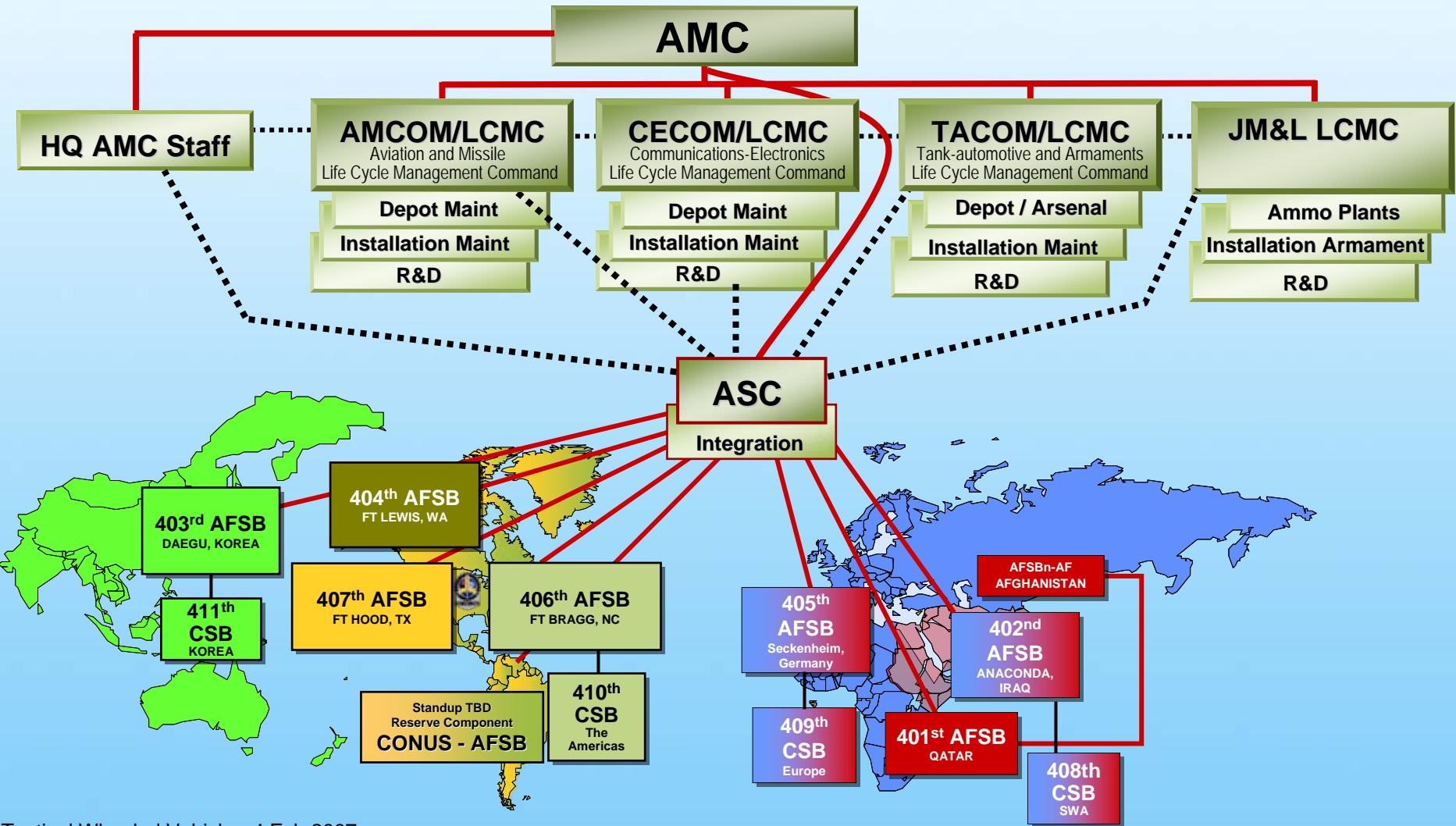


Life-Cycle Management Commands & Army Sustainment Command

UNCLASSIFIED

As of 23 Jan 07

Integrating the Unit & Weapon System View to Deliver Warfighting Capability





Recent Mission Changes



Maintenance

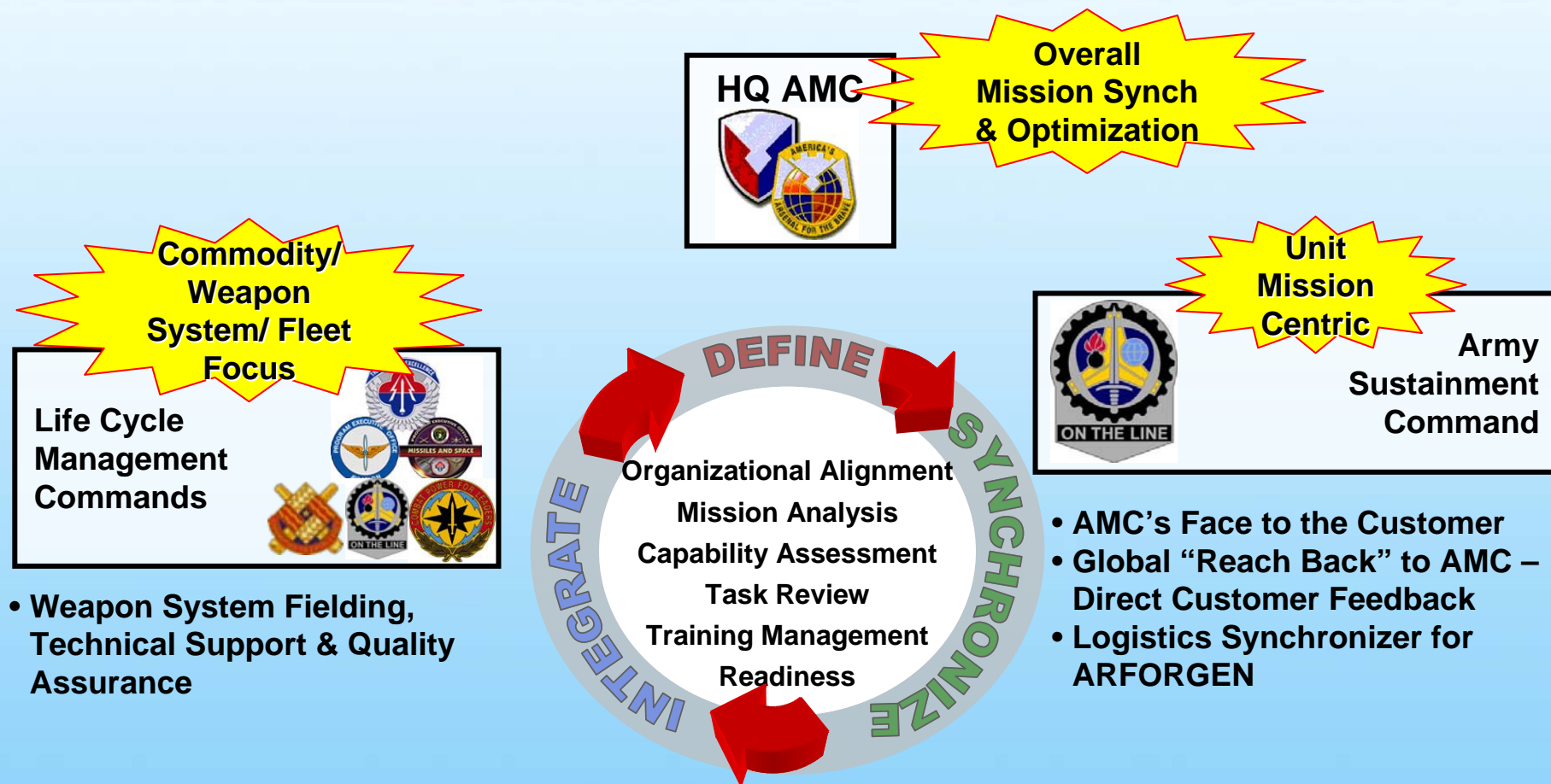
- TRADOC Fleet Management
- Field Logistics Readiness Centers (FLRCs)
- Directorate of Logistics (DoL) Functions
 - Maintenance
 - Supply
 - Ammunition
- Depot Capability and Forward Repair Activity

Management

- Pre-Deployment Training Equipment (PDTE)
- Left Behind Equipment (at home)
- Theater Provided Equipment (TPE)
- Property Accountability

Why Change?

National Strategic Level ↔ Operational Level ↔ Tactical Level



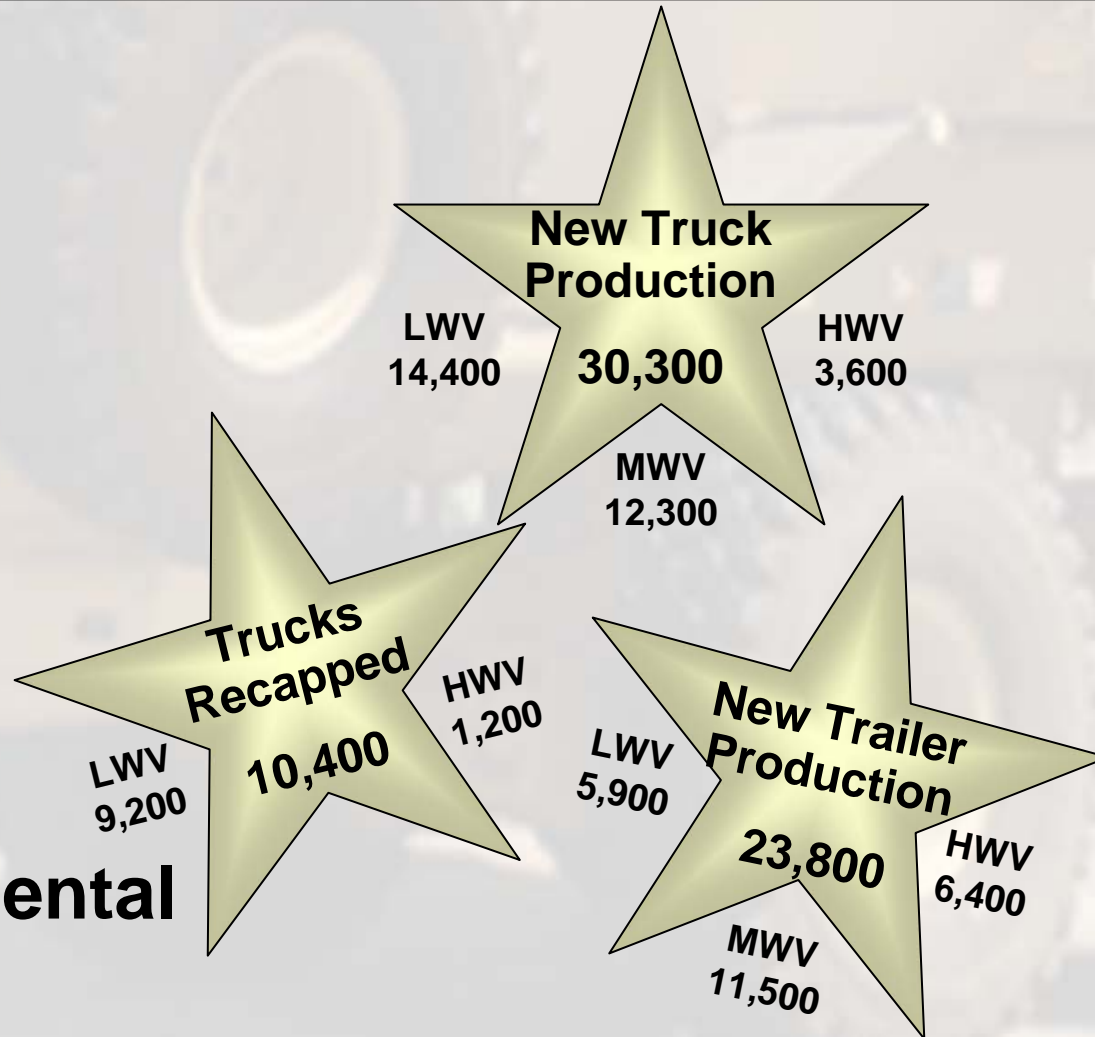
Key to E2E Logistics Connectivity



What's On The Horizon?

Funding

- FY07 Base Budget
- FY07 \$17.1B Bridge Supplemental
 - Procurement \$8.5B
 - O&M \$8.6B
- FY07 Main Supplemental



Repair Programs

Rebuild (Reset) Same Model



M1A1 AIM XXI
UH-60A
CH-47D
M88A1
M9 ACE
PATRIOT
SEE
FIREFINDER
ELEC SHOPS
FAASV

Two Paths

One Outcome

- Extended service life
- Enhanced Capability
- Improved:
 - Reliability
 - Safety
 - Maintainability
 - Efficiency
- Reduced Operating and Support (O&S) Cost



Selected Upgrade (Recap) New Model



Upgrade Warfighting Capability

Old Model		New Model
Digitized	to	M1A2 Basic
AH-64A	to	AH-64D
UH-60A	to	UH-60L/M
CH-47D	to	CH-47F
M88A1	to	M88A2
Upgrade 60 to 70 Tons	to	AVLB
BRADLEY A2	to	BRADLEY A3
MLRS	to	MLRS A1
Track upgrade only	to	M113 A3
HEMTT	to	HEMTT ESP
M998 HMMWV	to	M1097R



Tactical Wheeled Vehicles

Current Fleet

- Technology Insertions
 - Current Focus is Protection

Future Vehicles

- Mine Resistant Ambush Protected (MRAP) Vehicle
- Joint Light Tactical Vehicle (JLTV)

Light Tactical Vehicles – Tech Insertions



Medium Tactical Vehicles – Tech Insertions





Partnering=Success



- Shingo Award Winners
- ISO 9000/14000
- Improved Performance
- Robert T. Mason DoD Maintenance Award Winner
- Expanding Partnerships

AMC Public-Private
Partnerships in FY06

Partnerships ~ 340

Totaling ~ \$374.9M





Thoughts to Leave You With

- **AMC is transforming from an institutional to an operational command**
- **AMC's mission is to support the Warfighter**
 - **Army Field Support Brigade**
 - **Brigade Logistics Support Teams**
- **Tactical Wheeled Vehicle Community is key to our Outcome**
- **We are synchronizing acquisition, logistics, and technology**
- **We are on a wartime footing for production and repair – Need Your Support**



★ Focused on the
WARFIGHTER



UNCLASSIFIED



NDIA TWV Conference

TWV Transformation Efforts

**COL Steve Myers (USA)
and LtCol Ben Garza (USMC)**

6 February, 2007



UNCLASSIFIED

Agenda



- ◆ Evolution of Light Tactical Vehicles
- ◆ Input to JLTV timeline
- ◆ Market Research (EMIP & PSD)
- ◆ Science & Technology programs
 - Army and ONR S&T
 - FTTS ACTD Overview
 - MSV and UV Vehicle Capabilities and Lessons Learned
 - ONR S&T Support to JLTV
 - CTV Technology Demonstrator
- ◆ Who's Who in JLTV Program Planning
- ◆ Current JLTV Acquisition Schedule
- ◆ Summary

UNCLASSIFIED



UNCLASSIFIED



Light Tactical Vehicle Evolution: Jeep to JLTV



1959-1984

M151

Technology Improvements:
Redesigned for the Military.
Featuring a longer wheelbase,
softer ride, more powerful
engine, manual transmission,
and four wheel independent
suspension

1984-1995

M1025



Technology Improvements:
A0 Series (1984-93) 6.2L diesel engine, 3 spd transmission,
2,500 lb. payload (incl. crew), Up to 3,632 lb. Payload (shelter
carrier)
86,237 produced
A1 Series (1991-95) Improved drivetrain, Improved
suspension
8,899 produced
A2 Series (1994-present) 6.5L engine, 4 spd electronic trans,
9,000 lb. winch, CTIS ready, 4,400 lb. payload (incl. crew),
9,013 produced

1993-?
M1114/M1151



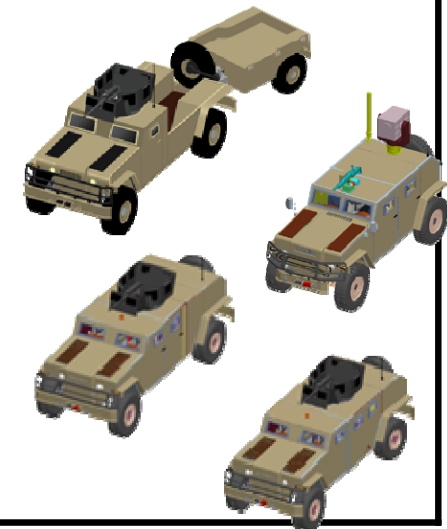
Technology Improvements:
Expanded Capacity Vehicles
(1993-present)
5,100 lb. payload (M1113,
M1151/1152, incl. crew)
Heavy Up-Armored HMMWV
(M1114 UAH)



(2005 Golden HMMWV)

2010-Future
JLTV FOV

Technology Improvements:
Integrated Survivability
(Armor),
Integrated C4ISR (space,
weight, power)
Net Payload Capacity with
Armor
Improved Mobility with and
without Armor



Today's Light Vehicle is More Complex – Modernization Cycles Accelerating

UNCLASSIFIED



Differences between HMMWV & JLTV Programs

- ◆ Governance Army Only
- ◆ MDA is PEO CS&CSS
- ◆ Mandatory reports fewer
- ◆ Initiatives
 - Add on Armor
 - Safety

- ◆ Governance Joint Services
 - User Community
 - AMCB
 - TRADOC/MCCDC
 - GOSC
 - Joint Staff
 - DAB/OIPT Members
 - Secretary of the Army
 - Secretary of the Navy
 - HQMC/CG MCSC
- ◆ MDA is DAE
- ◆ Mandatory reports greater
- ◆ Initiatives
 - Concept Decision
 - Time Defined Acquisition
 - Fuel Reduction
 - Companion trailers designed to integrate with FOV

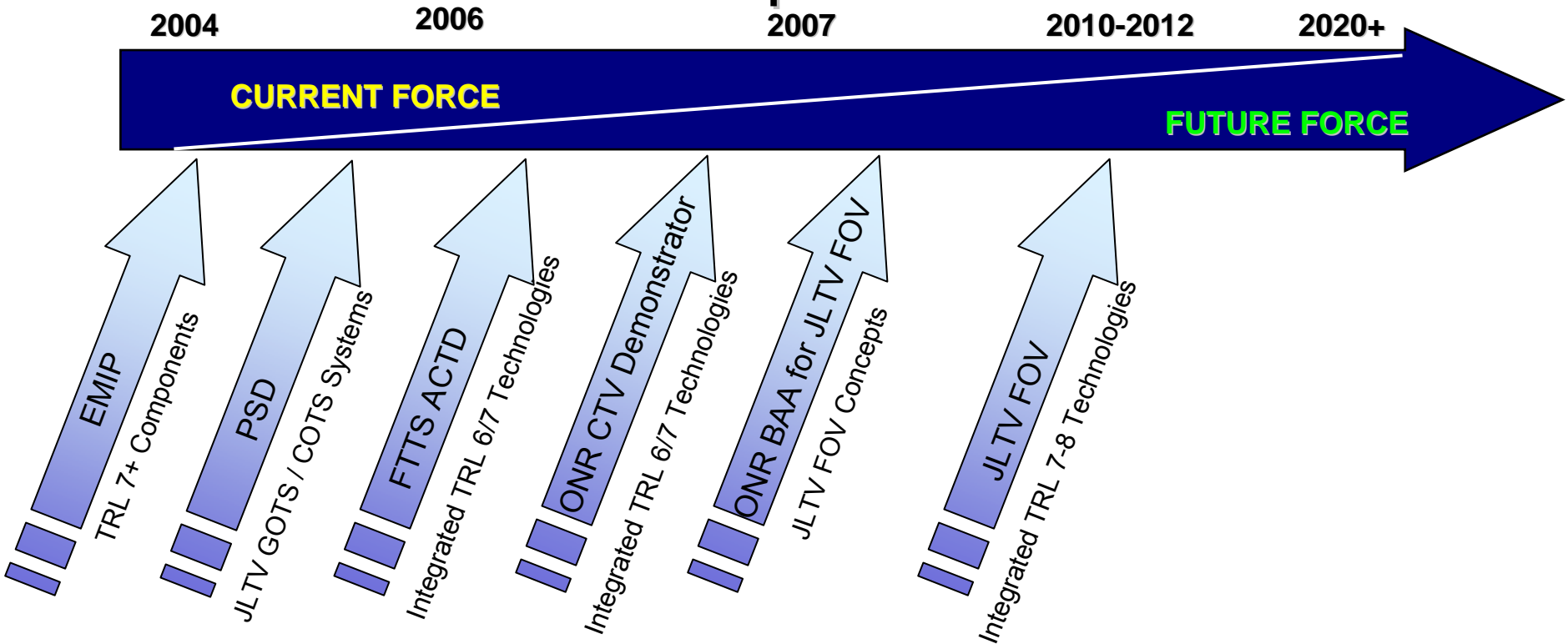


UNCLASSIFIED



Joint Light Tactical Vehicle (JLTV) FOV

Inputs



BLUF: *Efforts will enable us to be smarter requirements and specification writers*

UNCLASSIFIED



UNCLASSIFIED

EMIP and PSD Demonstrations Open to Industry

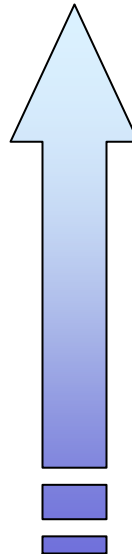


Market Education – not Source Selection

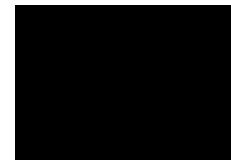
- ◆ **EMIP** held demonstrations for 145 technology ideas during 2006
- ◆ YUMA, AZ Jan 06 and Three Quarterly Demos at Warren
- ◆ Process continuously demonstrates mature component technologies (lower risk)
- ◆ Useful to JLTVCDD and CPD as well as Current Fleet Technology Insertion
- ◆ Next EMIP Technology Application Idea deadline 16 Feb 07 for April Demos
 - EMIP web site:
<http://contracting.tacom.army.mil/ssn/sources.htm>
- ◆ Technology Priorities
 - Improved Safety
 - Improved Survivability
 - Improved Reliability, Maintainability, and Supportability
 - Distribution and Mission Enhancements



EMIP
click blue box for collage



- ◆ **PSD** reviewed 32 systems during Aug 06 in Dec 07 reviewed the FTTS UVs and MSV with companion trailers
- ◆ Final report due Feb 07 to TWV BOD
- ◆ Demos invaluable in providing insights into potential performance which will support requirements development
 - Eg: GVW approaching 19,000 lb appears essential to meet LTAS protection and payload requirements
 - Eg: Power to weight ratio of 30HP/Ton appears essential to meet or exceed objective speed/acceleration requirement
 - Eg: GVW breakpoint for soft soil mobility appears to be in the 16,000-17,000 lbs range
 - Eg: Transportability by Helo and C-130 are further challenging constraints



PSD Overview
(click box for movie)

UNCLASSIFIED

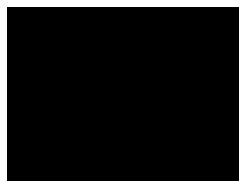


UNCLASSIFIED

Army & ONR Science & Technology Programs Supporting JLTV



- ◆ **FTTS ACTD** funded two contractors to develop Utility Vehicle Demonstrators
 - Specifications based on FCS requirements
- ◆ Currently leveraging ACTD to support JLTV program
 - FTTS ACTD has and is transitioning information (Phase 1 M&S) to JLTV Requirements process and will continue with existing scope
 - FTTS ACTD Phase 2 will demonstrate JLTV Utility Vehicle “like” Mission Role Variant from two Tier 1 suppliers in an Operational Environment (Ft. Lewis)
- ◆ **ONR S&T** complements ACTD outputs by funding five additional vendors M&S to assess JLTV specific requirements contained in draft CDDs (30 Nov 06)
- ◆ ONR will demonstrate a JLTV Combat Tactical Vehicle Variant



FTTS VIP Demo
Click box for movie

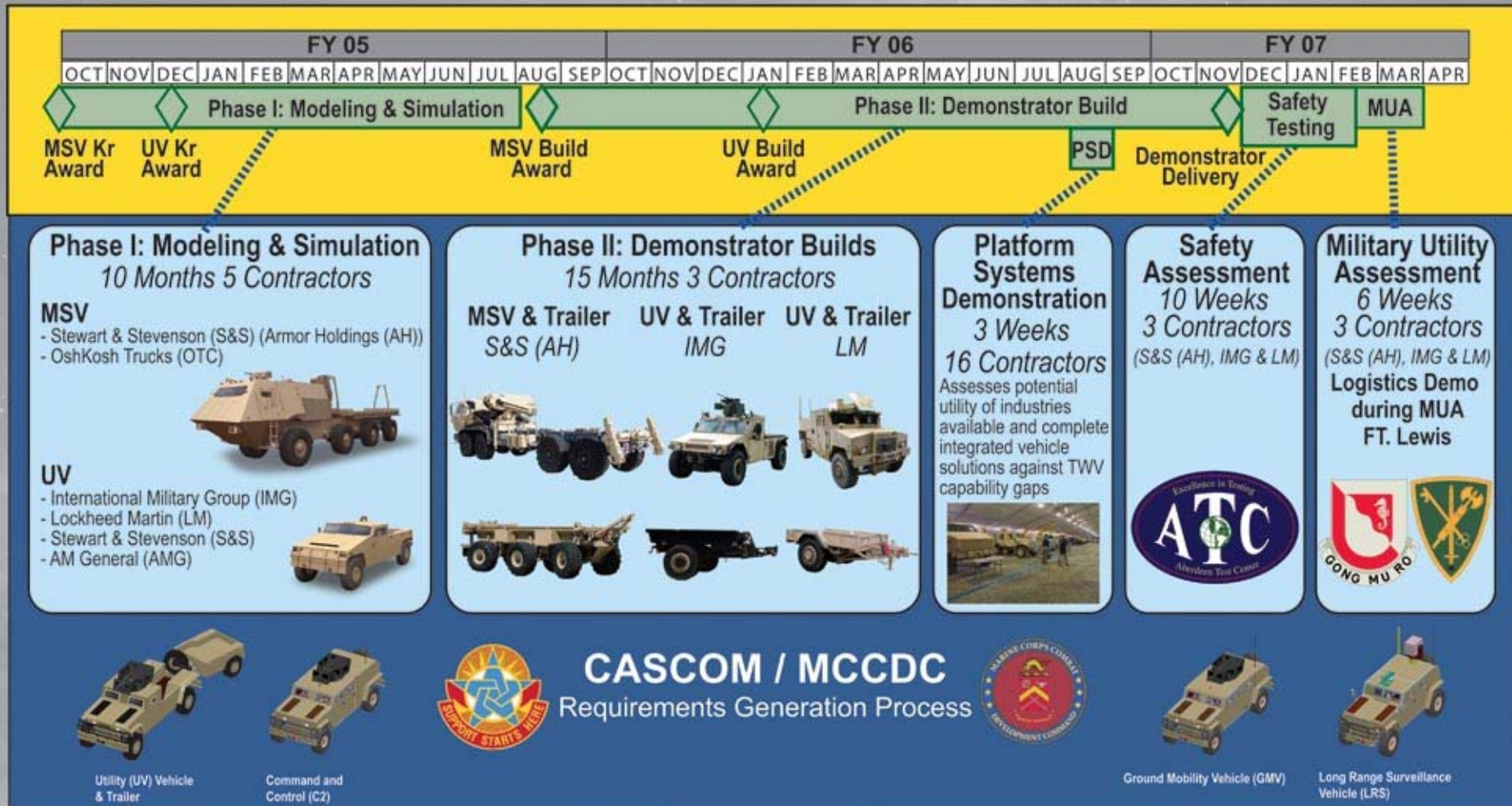


Combined Army/USMC S&T will have provided 11 vendor's detailed M&S and 4 clean sheet of paper demonstrators prior to JLTV MS B - reducing program risk and helping shaping Future TWV requirements

UNCLASSIFIED



FTTS ACTD



PEO CS&CSS/ PM FTS/ MARCORPSYSCOM
JLTV FOV Acquisition Process





UNCLASSIFIED

Armor Holdings (AH) – FTTS Demonstrator Maneuver Sustainment Vehicle (MSV) & Companion Trailer (CT)



Survivability & Force Protection

- Monocoque cab
- Modular Armor Kit
- Front, rear and side cameras
- NBC system
- Collision avoidance
- 2 person cab

Network Centricity

- Integrated communications suite
- Integrated computer system

Sustainability

- 30 kW exportable AC power
- Enhanced On-board Diagnostics
- Lube for Life (bushings & bearings)

Transportability

- 96" w x 102" h x 406" l
- C-17 transportable
- 49,000 lbs. Curb Weight
- 75,000 lbs. Gross Vehicle Weight

Mobility

- Parallel Hybrid Electric Propulsion
- Air Suspension Height Control (ASHC) and Load Monitoring System (LMS)
- Central Tire Inflation System (CTIS) / run-flat
- Anti-Lock Braking System (ABS)

Payload

- 13 Tons - Residual Payload w / B Kit

Distribution

- Multi-functional LHS & MHE crane hook lift and a forklift
- 6,100 lbs at 23 feet MHE
- 13,200 lbs at 24' 3" LHS

Operational Range

- 300 miles

- C9 8.4L engine (335 kW @ 2200 rpm)
- 4 NIMH batteries 8.5 amp hrs, 336 Volts
- Integrated starter/generator (ISG) 120kW peak, 100 kW continuous
- 7 speed hydrokinetic automatic transmission



MSV Companion Trailer (CT)

Commonality with MSV

- Axles, suspension, wheels, tires, brakes, ABS, Central Tire Inflation System (CTIS), 24 Volt CAN/Bus System

Distribution

- Receives Flat Racks and ISO containers from Truck Load Handling System (LHS)

- Move loads and trailer without truck

Mobility

- 3 Axle with semi-autonomous operation
- Steering on Axle #1 and #3
- Turning radius (Autonomous): 20 ft-8 in
- Max speed 1.89 MPH
- Vertical Obstacle 24 in Step
- Gradient (Autonomous) – 30%
- Air Bag Independent Wishbone Suspension with ride height control
- 230 mm Jounce, 200mm Rebound
- Central Tire Inflation System (CTIS)

Deployability

- Self-Powered offload C-130 and operational watercraft Joint Requirement

Operational Range

- Range 65 miles
- Power Diesel Engine (73 HP)
- Hydrostatic Drive Train
- Tethered Coupled / Wireless Uncoupled Control

UNCLASSIFIED



UNCLASSIFIED

International Military Group – FTTTS Demonstrator *Utility Vehicle (UV) & Trailer*



Survivability & Force Protection

- Monocoque cab
- Modular Armor Kit
- 2 person cab

Network Centricity

- Integrated communications suite
- Integrated computer system

Sustainability

- Limited on-board diagnostics
- 75kW integrated, exportable AC power

Transportability

- 92" w x 83" h x 221" l
- CH-47 and C-130 Transportable
- Demonstrator curbweight = 18,600 lbs
- Reducible weight = 16,400 lbs

Mobility

- Parallel Hybrid electric propulsion
- Torsion bar suspension, passive shocks
- Designed for adjustable ride height control
- Central Tire Inflation Systems (CTIS)
- Rear axle steer
- Anti-Lock Braking System (ABS)

Payload

- 3400 lb payload with integral armor
- On-board crane with 800 lb lift @ 8'

Operational Range

- Over 555 mile range



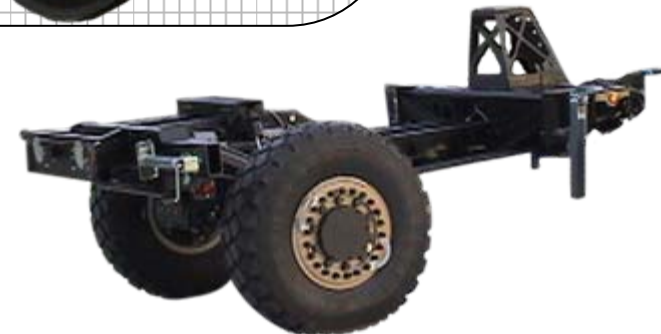
UV Companion Trailer

Commonality with UV

- Common tires, suspension, brakes with truck

Payload

- 5500 lb payload



UNCLASSIFIED



UNCLASSIFIED

Lockheed Martin – Owego – FTTS Demonstrator *Utility Vehicle (UV) & Trailer*



Survivability & Force Protection

- Monocoque cab
- Modular Armor Kit
- Machine Gun Ringmount
- 2 crew + 1 jump seat

Network Centricity

- Integrated communications suite
- Integrated computer system

Sustainability

- Limited on-board diagnostics
- 8kW integrated exportable AC power

Transportability

- 95" w x 90" h x 229" l
- CH-47 & C-130 Transportable
- Demonstrator curbweight = 21,600 lb
- Reducible curbweight = 19,705 lb

Mobility

- Parallel Hybrid electric propulsion
- SLA suspension with Air Spring, passive shocks
- Adjustable Ride height control (4 position)
- Central Tire Inflation (CTIS)
- Anti-Lock Braking System (ABS)

Payload

- 3300 lb payload with A-kit armor
- On-board crane with 1000 lb lift @ 5'

Operational Range

- 528 mile range



UV Companion Trailer

Commonality with UV

- Common tires, suspension, brakes with truck

Payload

- 6100 lb payload

UNCLASSIFIED



Lessons Learned from the ACTD

- ❖ That industry presently has products which potentially can meet *many* of our present and future requirements..... ***but not all, trades will be required***
- ❖ Integration of advanced technologies on *new* systems is possible.... ***but seldom without a significant effort and risk***
- ❖ Must be realistic in our requirements..... ***understand there is going to be limited dollars available***



ONR S&T Support to JLTV

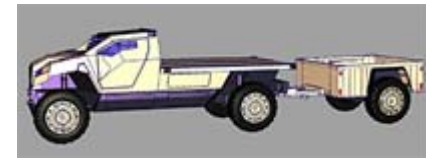
ONR is conducting studies, analyses and technology development efforts in the areas of concepts, survivability, and mobility

◆ Technology evaluations and trade studies

- Awarded Contract to Nevada Automotive Test Center (NATC)
- Validation of JLTV CDD and performance specification

◆ Fabricate a Gap 1 technology demonstrator

- Nevada Automotive Test Center
- Build, test, and evaluate a Combat Tactical Vehicle demonstrator platform



◆ Concept studies/mockup construction

- Awarded contracts to AM General, General Dynamics, BAE, Cadillac Gage, Oshkosh
- Generate concepts for FOV:
 - Near term concept (for MS B)
 - Far term concept (MS C and beyond)
 - Future technology investment areas
- Deliverables aligned with key acquisition events



ONR (NATC) – Technology Demonstrator Combat Tactical Vehicle (CTV)



Survivability & Force Protection

- 6 Marine/Soldier cab
- Monocoque Aluminum-based V-Shaped Lower Hull with Integrated Armor/Structure
- Modular Armor Kit
- Blast-Mitigating Seats
- Air Conditioning w/ Modular NBC
- Automatic Fire Suppression
- Accepts Multiple Weapons Stations

Network Centricity

- Integrated communications suite

Sustainability

- Limited on-board diagnostics
- 10Kw on the Move & 30Kw Stationary Integrated, exportable AC power

Transportability

- 96" w x 220" l Operational Ht = ~ 86 inches & Reducible Ht = 76.4 inches
- CH53/CH47 EAT & C130 Transportable
- MPS & Amphibious shipping
- Demonstrator curb weight = 15,600 lbs

Mobility

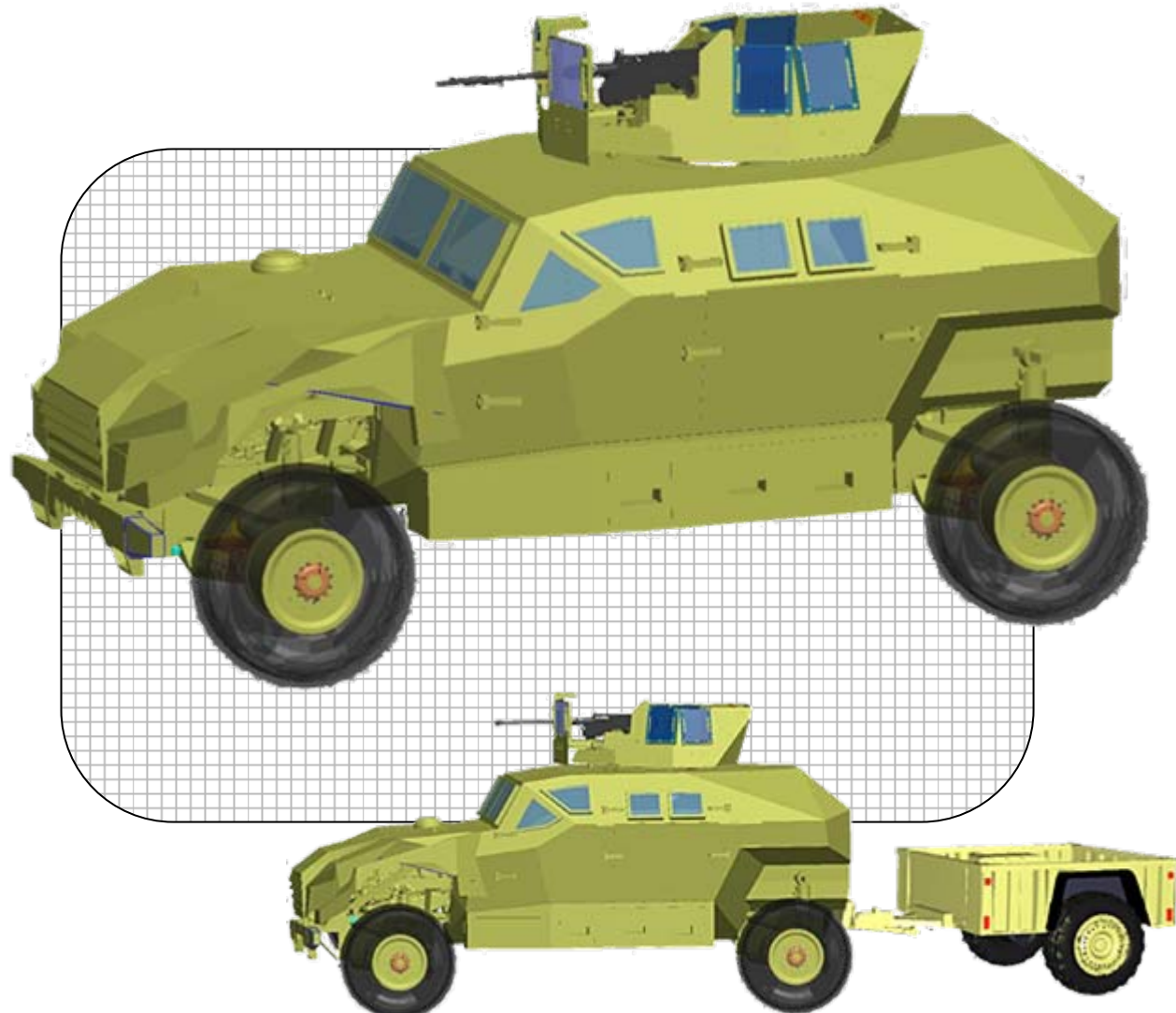
- 322 Hp Detroit Diesel 926
- 6-Speed Twin Disc Transmission with Integral Transfer Case
- SLA Independent w/ 3-Position Ride Height Adjustment & 24" Wheel Travel
- Central Tire Inflation Systems (CTIS)
- Anti-Lock Braking System (ABS) w/ Integrated Stability Control

Payload

- 6000 lb payload with integral armor

Operational Range

- 400 miles



UNCLASSIFIED

~14~



S&T Support to JLTV

ONR/RDECOM are conducting studies, analyses and technology development efforts in the areas of concepting, survivability, and mobility

Mobility Initiatives:

- Advanced suspension development
 - Awarded contract to L-3 Communications
- Mature Magneto-Rheological (M-R) fluid technology
- Transportability studies
 - Address critical ship and aircraft interface
- Fuel efficiency improvement initiatives
 - Define military duty cycles and conduct hybrid electric vehicle (HEV) studies
 - Conduct modeling and simulation to quantify vehicle energy usage
 - Pursue innovative powerplant and vehicle accessory energy reduction technologies



Survivability Initiatives:

- Requirements Analysis (Threats out to 2017), Technology Assessments (Industry & Govt.), Modeling & Simulation (Mine Protection, Operational Effectiveness), Technology Development/Maturation (Armor spin outs, non-Armor technologies)
- Integrated Survivability: Modular, Reconfigurable, System Engineering Design Approach



UNCLASSIFIED



Who's Who in JLTV Program Planning

- ◆ Science and Technology
TARDEC/ONR
 - Technology development for large database of information to support requirements development
- ◆ Requirements Development
CASCOM/ MCCDC
 - CDD development and staffing for approval
- ◆ Materiel Development
PEO CS&CSS/MARCORSYSCOM
 - Milestone documentation development and approval for MS B
- ◆ Program Governance
OSD/ARMY/NAVY
 - Program Certification and Milestone Decisions



UNCLASSIFIED



UNCLASSIFIED

JLTV Acquisition Schedule



As of 1 Feb 07 - NDIA

Science & Technology

(ONR & TARDEC)

Demonstrations

Studies & Assessments

FTTS ACTD M&S (Phase 1)

FTTS ACTD Demonstrators (Phase 2)

JLTV Req's Study & Demonstrator

JLTV Concept Design BAAs

JLTV Requirements

(MCCDC & TRADOC)

Joint Initial Capabilities Document (JICD)

Evaluation of Alternatives (EoA)

Capability Development Document (CDD)

JLTV Acquisition

(MARCORSSCOM & PEO CS&CSS)

Establish JPO

Acquisition Program Documentation

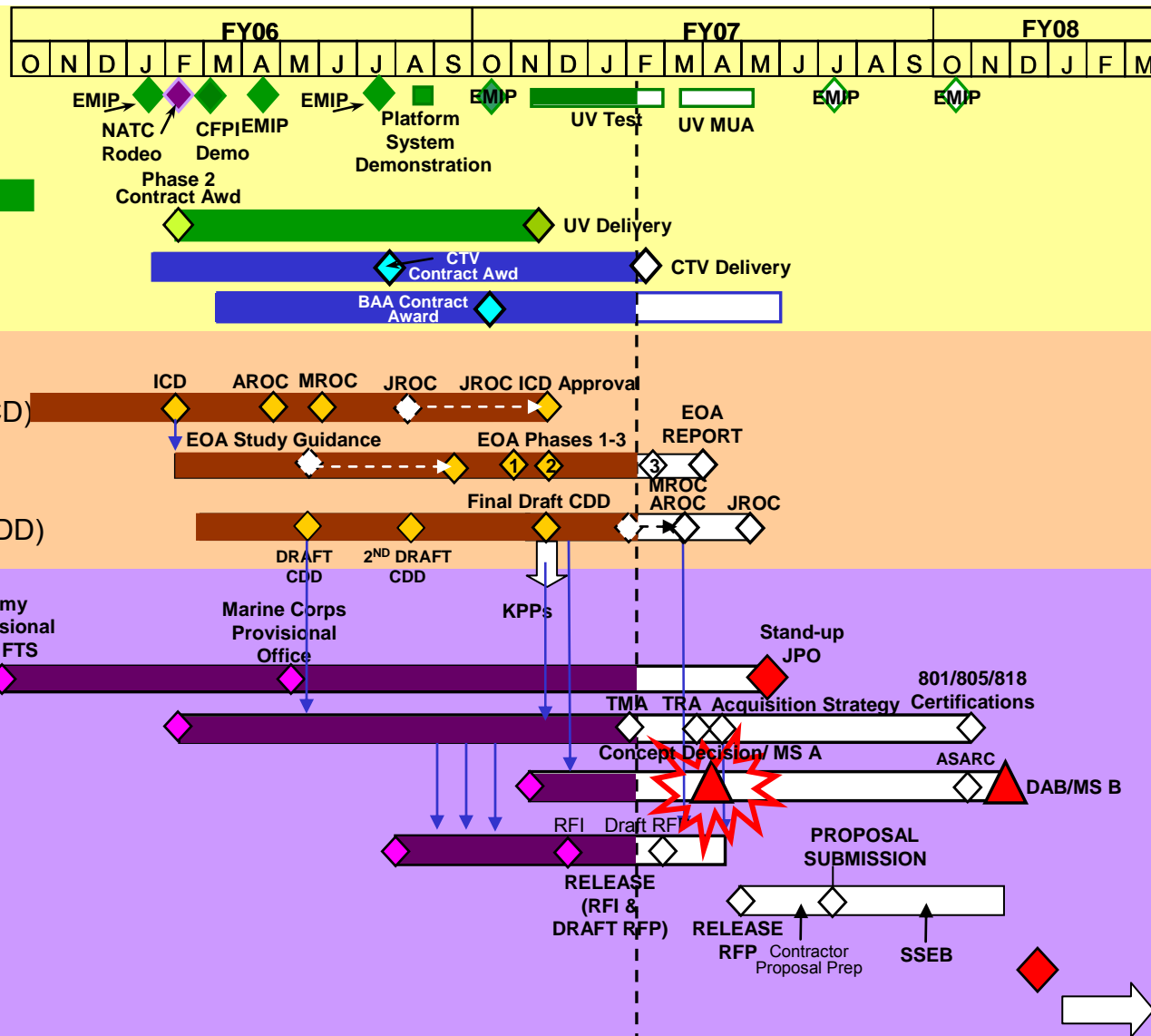
DAB/MS B Preparation and Staffing

Draft RFP Prep/Comments/Revision

Final RFP/ Source Selection

Award SDD Contract(s)

SDD



UNCLASSIFIED



UNCLASSIFIED

Summary



- ◆ Entering Program at the MS B NOV 07
- ◆ Draft RFP late Feb/early Mar 07; Final RFP May 07
– check FedBizOps
- ◆ JLTV is an opportunity for Industry... this is where you spend your IR&D
- ◆ RFP info will also be posted at the JLTV website
<http://contracting.tacom.army.mil/ssn/jltv.htm>
- ◆ JLTV@tacom.army.mil

UNCLASSIFIED



U.S. Army Research, Development & Engineering Command

**Sustaining the Current -
Improving the Future**

February 2007



Technology to the Warfighter Quicker



Technology Insertion



- **Condition Based Maintenance**
- **Exportable Power Source**
- **Increased Survivability**
- **Increased Internal Alternator/Generator Power Source**



Future

SRATS

MRAP

FTTS

JLTV

- **Suspension Performance**
- **Hybrid Electric**
- **Composite Armor Shell**
- **Internal/External Power Enhancement**



M1114 / Golden HMMWV Power

CROWS



ITAS TOW

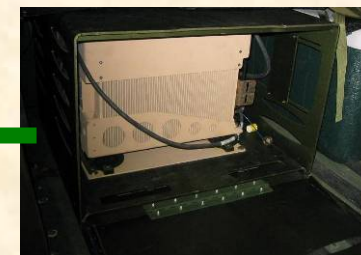
SINGARS
& VIC-3



DAGR /
PLGR



BPMTU



CREW 2 (DUKE)

DVE



Blue Force Tracker
(FBCB2)



LRAD

Other Possible Equipment:

- Blowtorch
- Rhino II
- Double Shot
- MTS
- FH MUX
- Micro Climate cooling vest
- Harris Radio
- CHAMELEON
- Duke 2 plus





Power Draw on 200A HMMWV Alternator

With electrical systems used in theater

Item	Steady State (A)	Surge (A)
Engine, drivetrain & accessories	5	30
A/C on High (Low Steady State = 16A)	23	40
Dual Long Range SINCGARS	2.25	18.5
Blue Force Tracker	0.015	2.5
DAGR	0.25	1.5
EPLRS	2.5	35
DUKE	13	30
AFES (Surge at discharge only)	0.1	25
VIS (Surge for 15ms on cueing)	2	20
DVE (estimate)	2	4
BPMTU (see smart-charging note*)	0.24	60
VIC-3	1.35	15
Total in Amps:	51.705	281.5

*NOTE: BPMTU smart-charging: 12-60A while charging turret batteries; only during low alternator loads; 0.050-0.240A with charged turret batteries



Future and Optional Power Draw

Item	Steady State (A)	Surge (A)
CROWS	16	32
Rhino II (850 watts)	40	45
Blowtorch	60	190
Double Shot	<1	<2
PLGR	0.075	0.125
MTS	1.7	3.5
FH MUX	3.57	3.57
Micro Climate cooling vest (estimate)	1	3
ITAS TOW	38	45
Harris Radio	<20	20
CHAMELEON	12	60
Duke 2 plus (estimate)	20	40





CALL TO DUTY

BOOTS ON THE GROUND



Balancing Modernization and Operational Needs

NDIA Tactical Wheeled Vehicle Conference

LTG Stephen Speakes
5 February 2007

UNCLASSIFIED





- **Evolving Strategic Environment**
- **An Army at War**
- **Army Modernization**
- **New Methods**
- **Way Ahead**





- **Relentless cycle of changing tactics**
 - Increasing lethality of enemy weapons (hyper kinetic)
 - Increasing importance of human dimension
 - Increasing importance of information operations
- **360° battlefield**
 - Extended distances and borders
 - Complex terrain (urban, mountain, jungle, & littoral)
 - Dispersed targets
- **Paramilitary and terrorist forces**
 - Other types on the horizon
 - Adversaries have “gone to school” on US operations



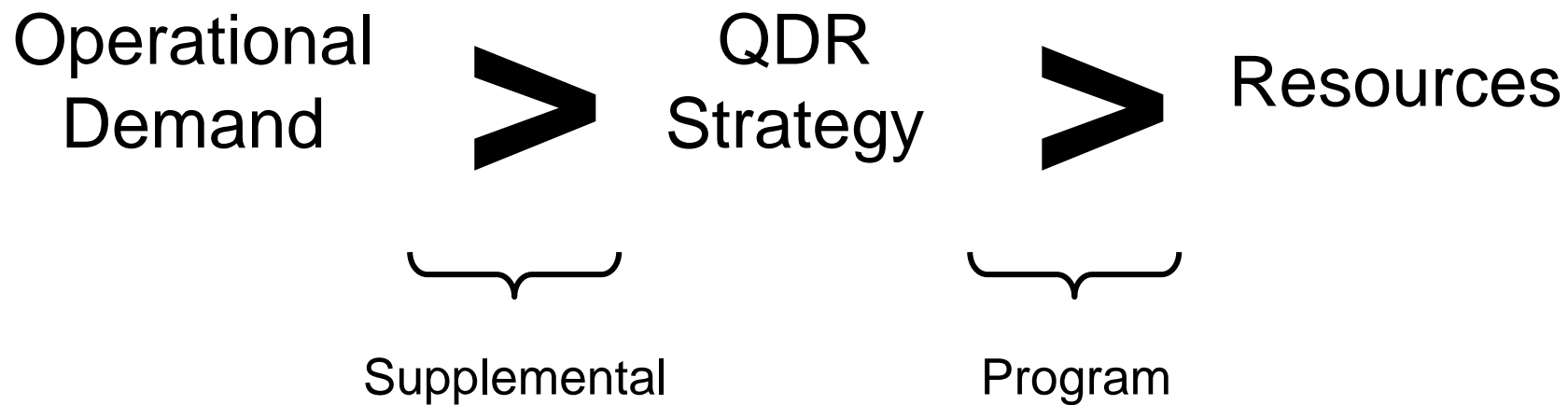


- **Surging in FY07**
- **Accelerating in FY08**
- **Growing in FY09-13**
- **Modernizing now – future**
- **Changing the Mobilization Policy**



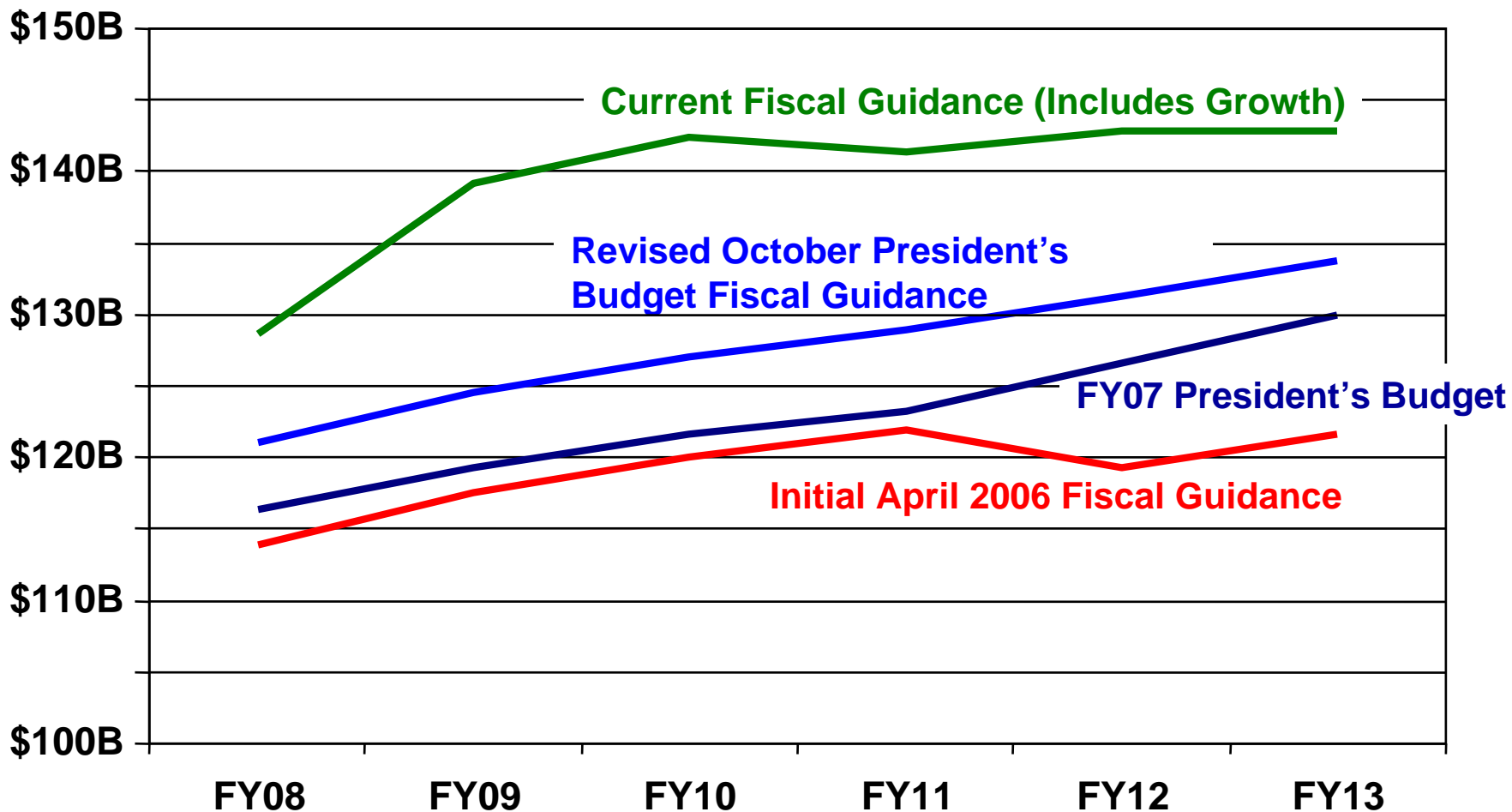


Managing Shortages



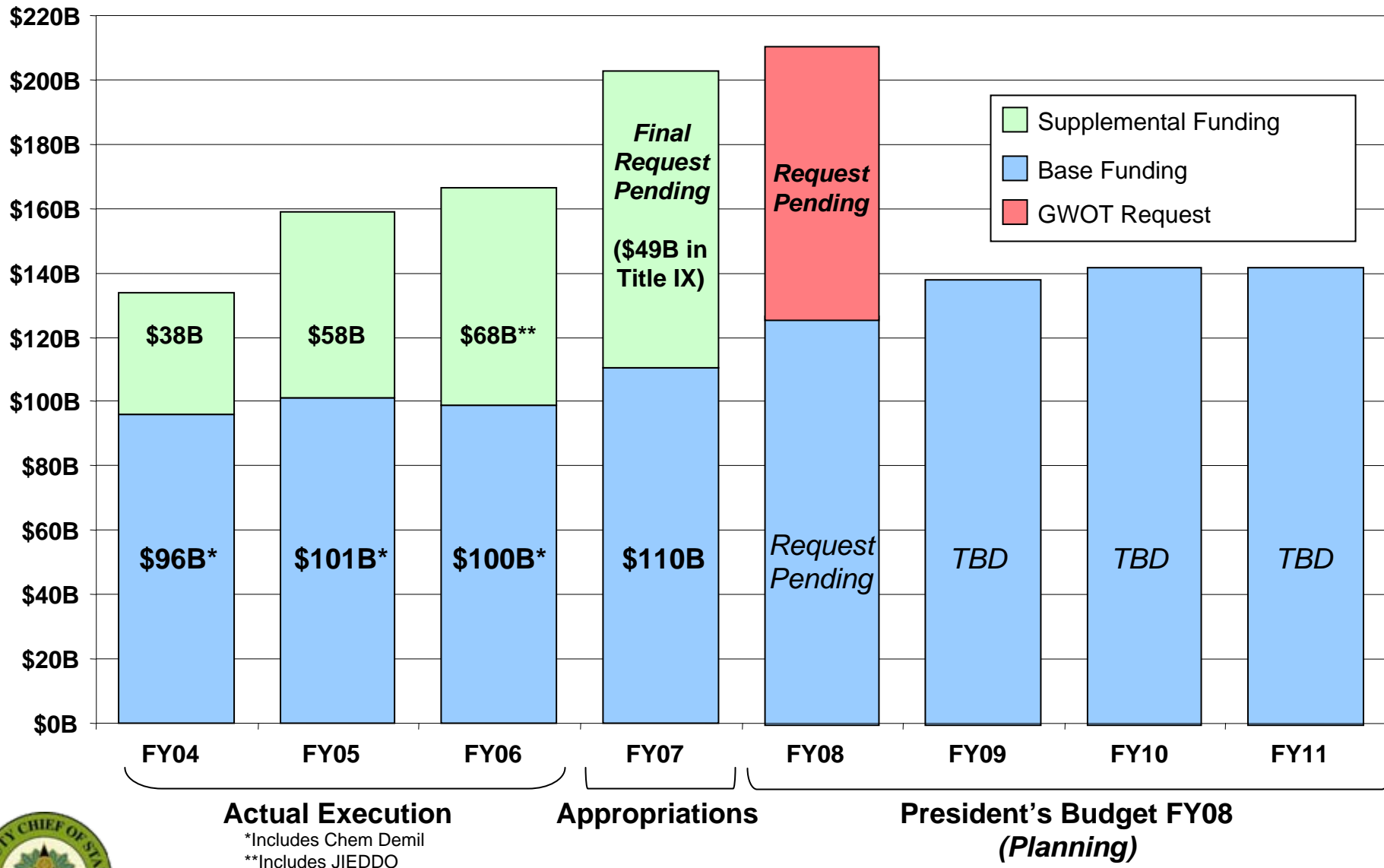


Army Resourcing Strategy





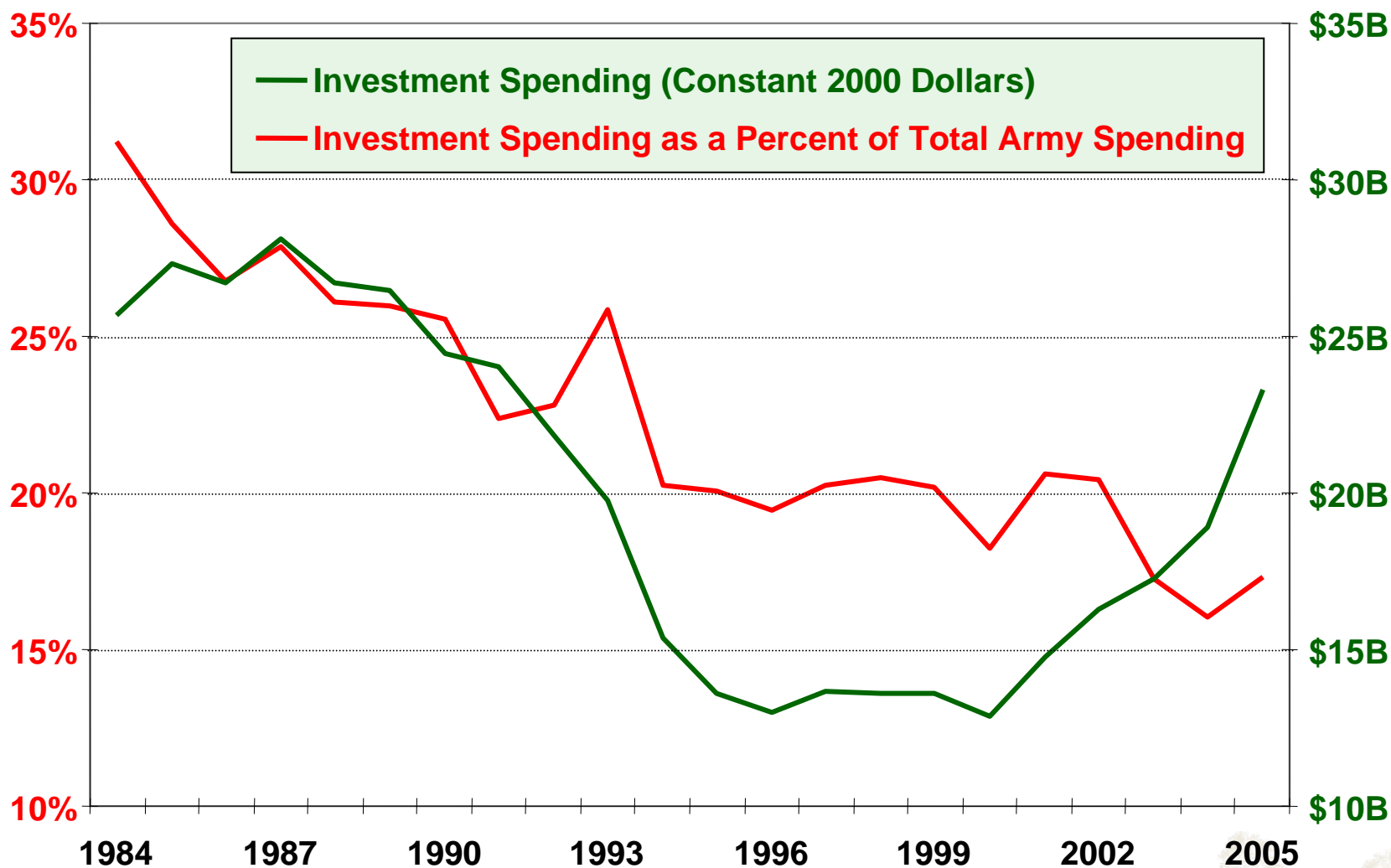
Base and Supplemental Funding





CALL TO DUTY
BOOTS ON THE GROUND

Army Investment Accounts



UNCLASSIFIED



CALL TO DUTY
BOOTS ON THE GROUND

Army Modernization

*Industrial Age:
Overwhelm with Force*



Uncertainty

Current

Future

*Information Age:
Empower the Soldier*

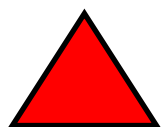


UNCLASSIFIED



CALL TO DUTY
BOOTS ON THE GROUND

The Army's Modernization Program



Threat
+
Missions



C²ISR
Force
Protection
Maneuver

Strike
Capability

Changed environment implies changes in procurement.



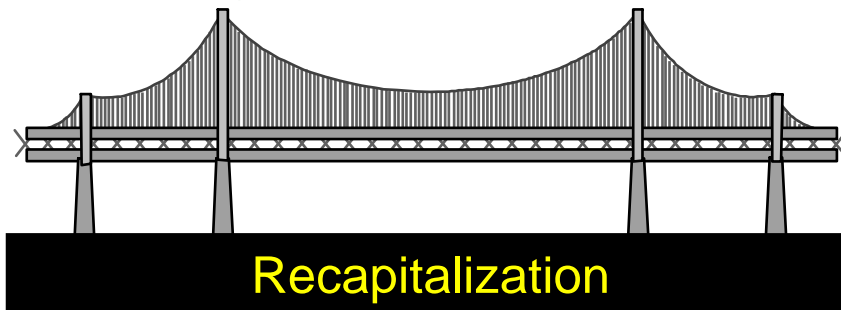
UNCLASSIFIED



Future Combat System Strategy

*Spin Out FCS Capabilities to
Bridge Current to Future*

**Modular Heavy
BCT**



**Modular FCS
BCT**

Current

- ✓ Networked
- ✓ More Sensors
- ✓ More Combat Vehicles
- ✓ More Infantry Squads
- ✓ More Deployable
- ✓ Fewer Soldiers
- ✓ More Capable

Future





CALL TO DUTY
BOOTS ON THE GROUND

TWV Modernization

**Current:
UAH**

***MRAP &
Captains of
Industry***

**Future:
JLTV**

We need help from industry in accelerating this process!



UNCLASSIFIED



- **Working with Congress to create programming flexibility**
- **Working jointly with sister services to identify joint solutions**
- **Working cooperatively with industry to find solutions faster**
- **Working within the government to balance current force & future force**





- **Continue to fill the holes**
 - **Make Army modular force a reality**
- **Reset the force**
 - **Keep an Army at war ready**
- **Grow the force**
 - **Build strategic depth**
- **Modernize the force**
 - **Empower and protect the Soldier**
 - **Network the Soldier**





Questions ??



The Army National Guard

est. 13 December 1636

LTG Clyde A. Vaughn
Director, Army National Guard

Winter 2007

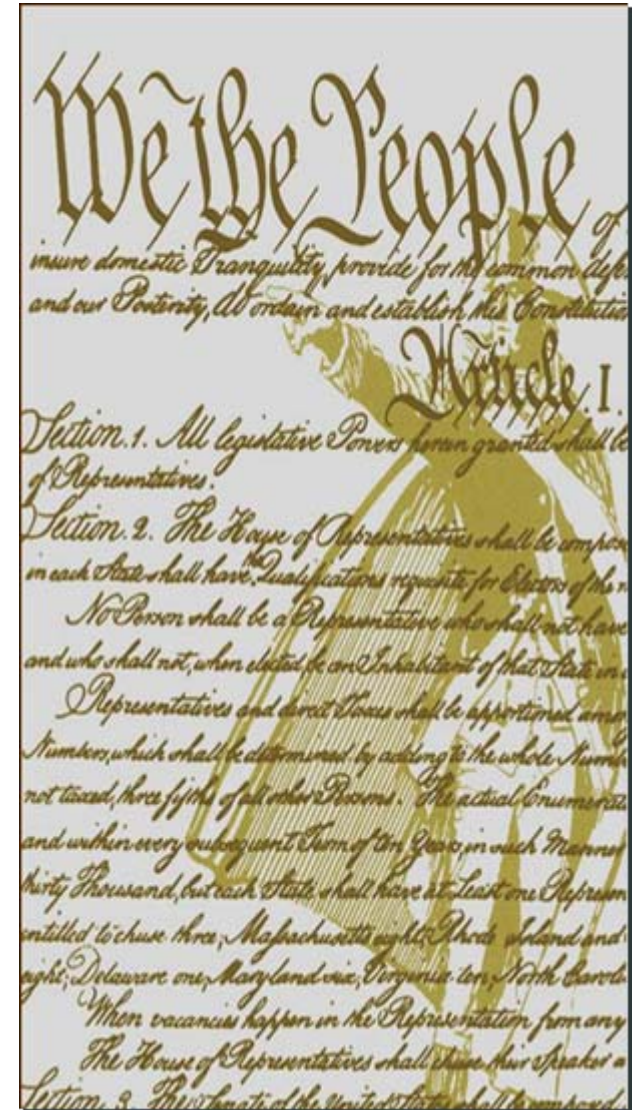
It takes the ARNG to be ARmy StroNG



History of the Army National Guard

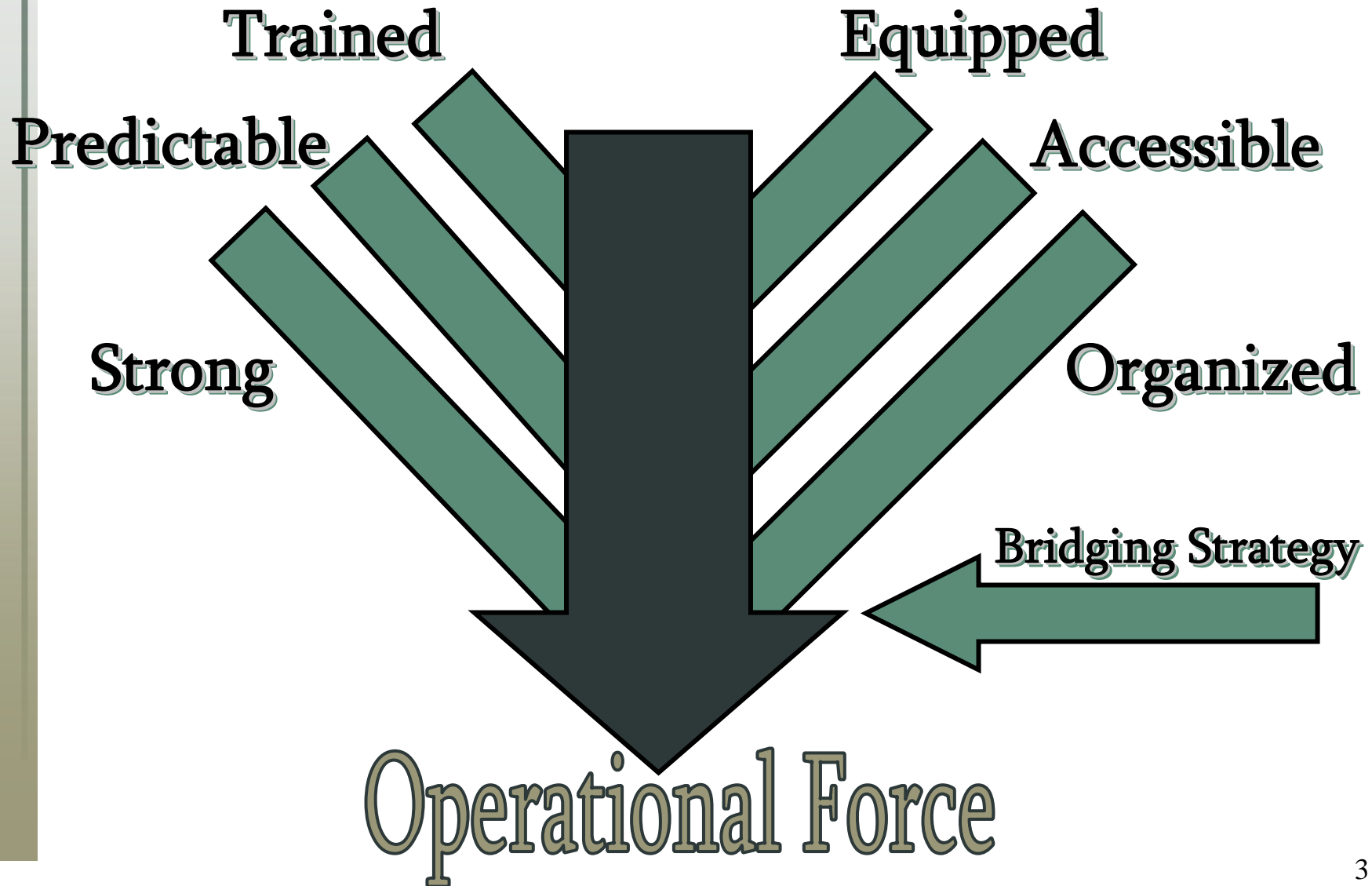
The Congress Shall Have Power:

- To provide for calling forth the militia to execute the laws of the union, suppress insurrections and repel invasions;
 - To provide for organizing, arming, and disciplining, the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the states respectively, the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress
- U.S. Constitution, Article I, Section 8



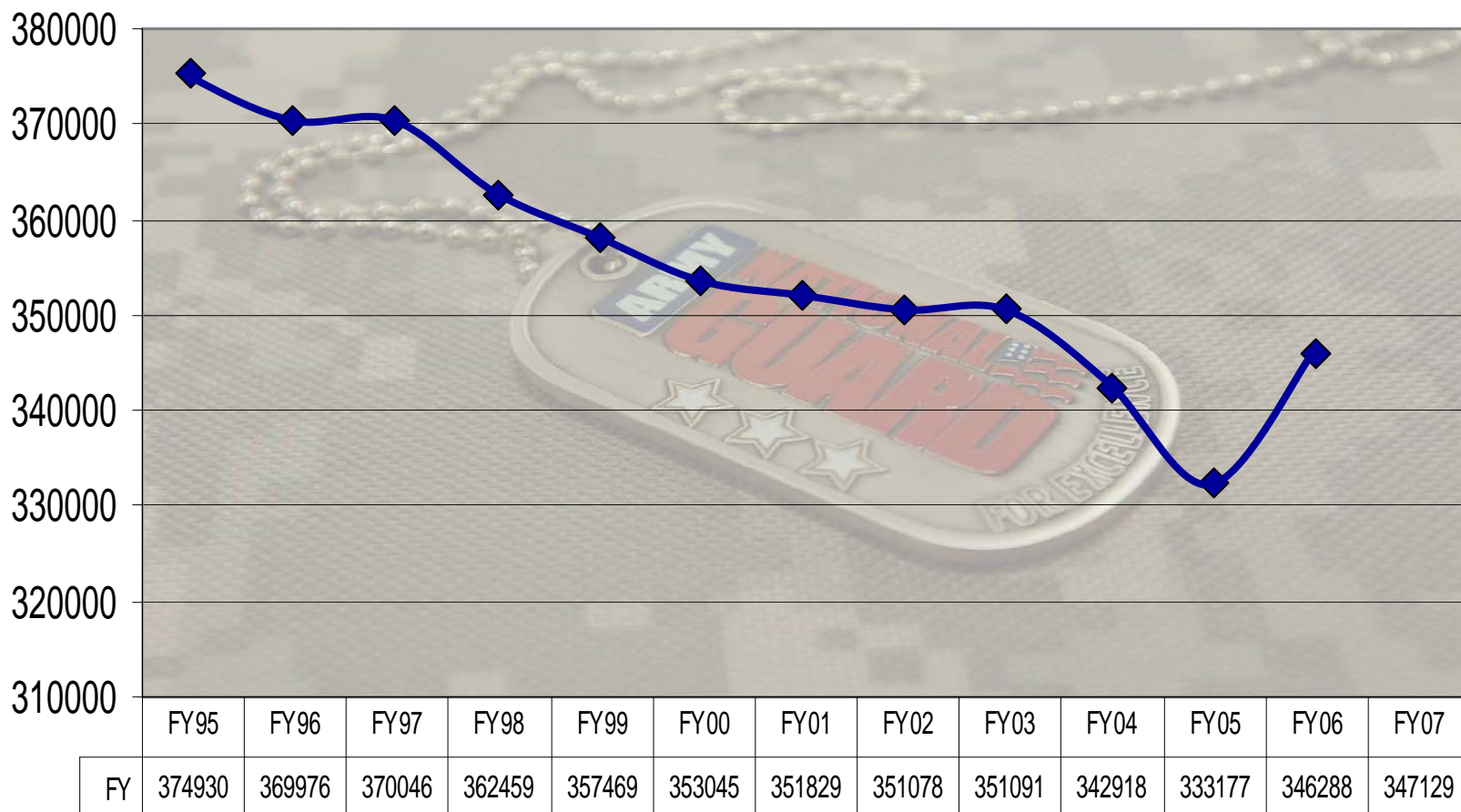


Resetting the ARNG for the Decade Ahead



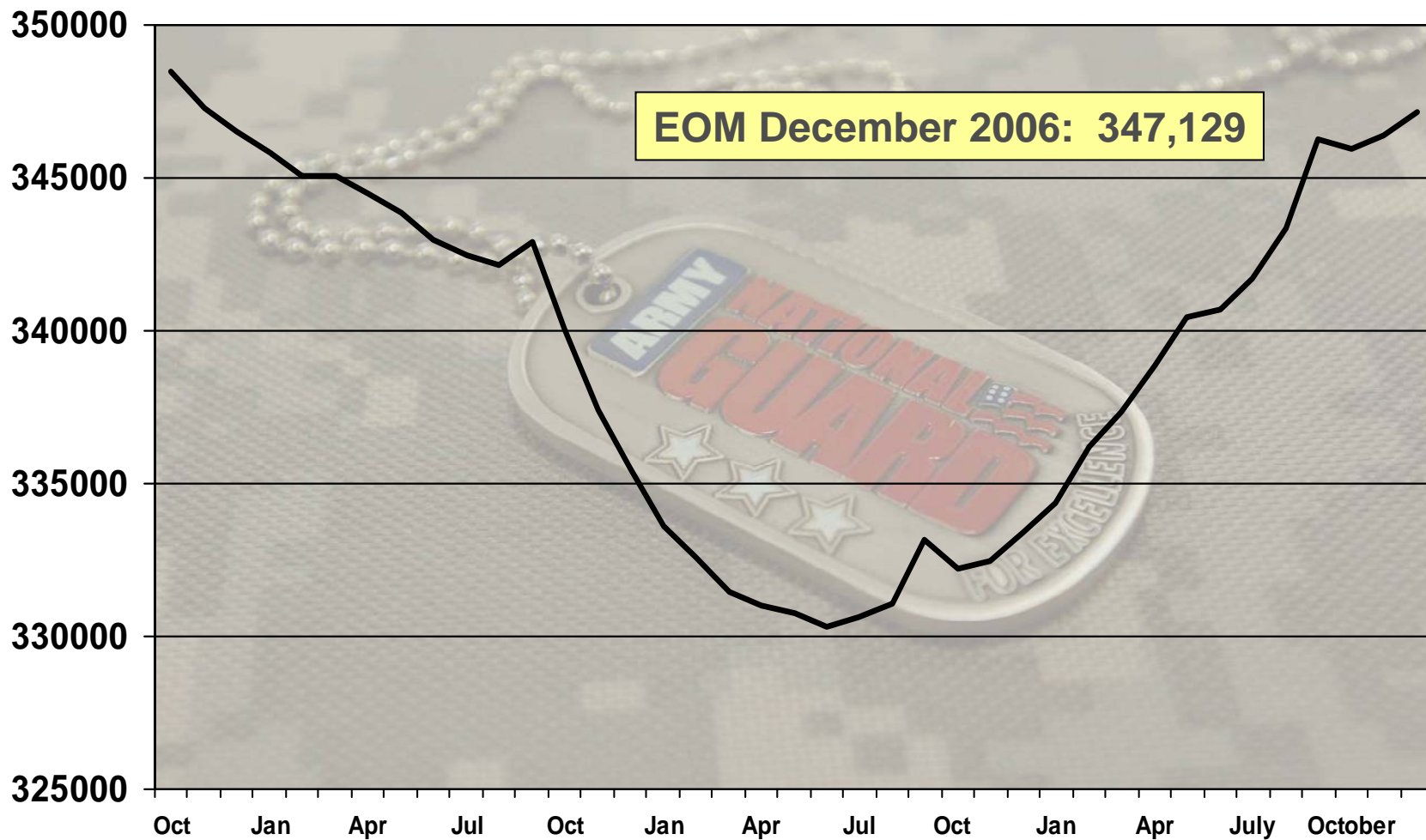


ARNG Strength FY95 to FY07 (YTD)





ARNG Strength FY04 to Present



350 at 370!



G-RAP and the Path to 350

Guard Recruiter Assistant Program, G-RAP, is a “Performance Based” contracted recruiting assistance program with a sponsorship component available for Prior Service (PS) and Non-Prior Service (NPS) recruiting efforts



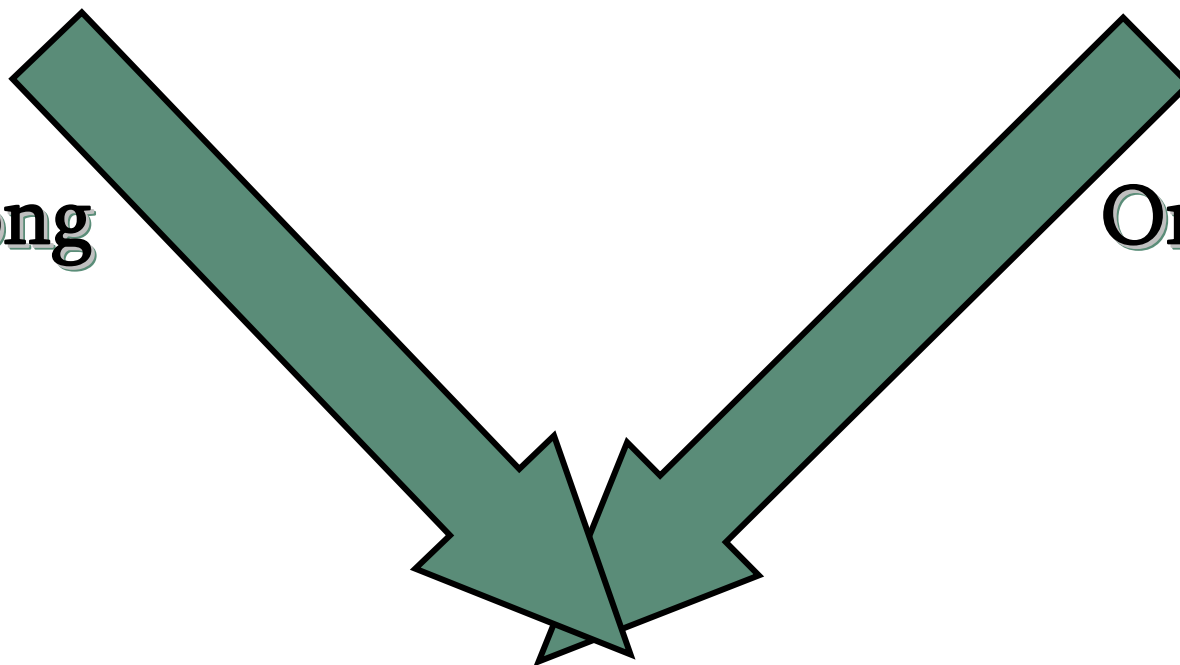
- **Total RAs: 121,624**
- **Active RA's: 107,692**
- **Potential Soldiers: 49,392**
- **All Accessions: 24,911**
- **PS Accessions: 5,750**
- **NPS Accessions: 19,161**



Resetting the ARNG for the Decade Ahead

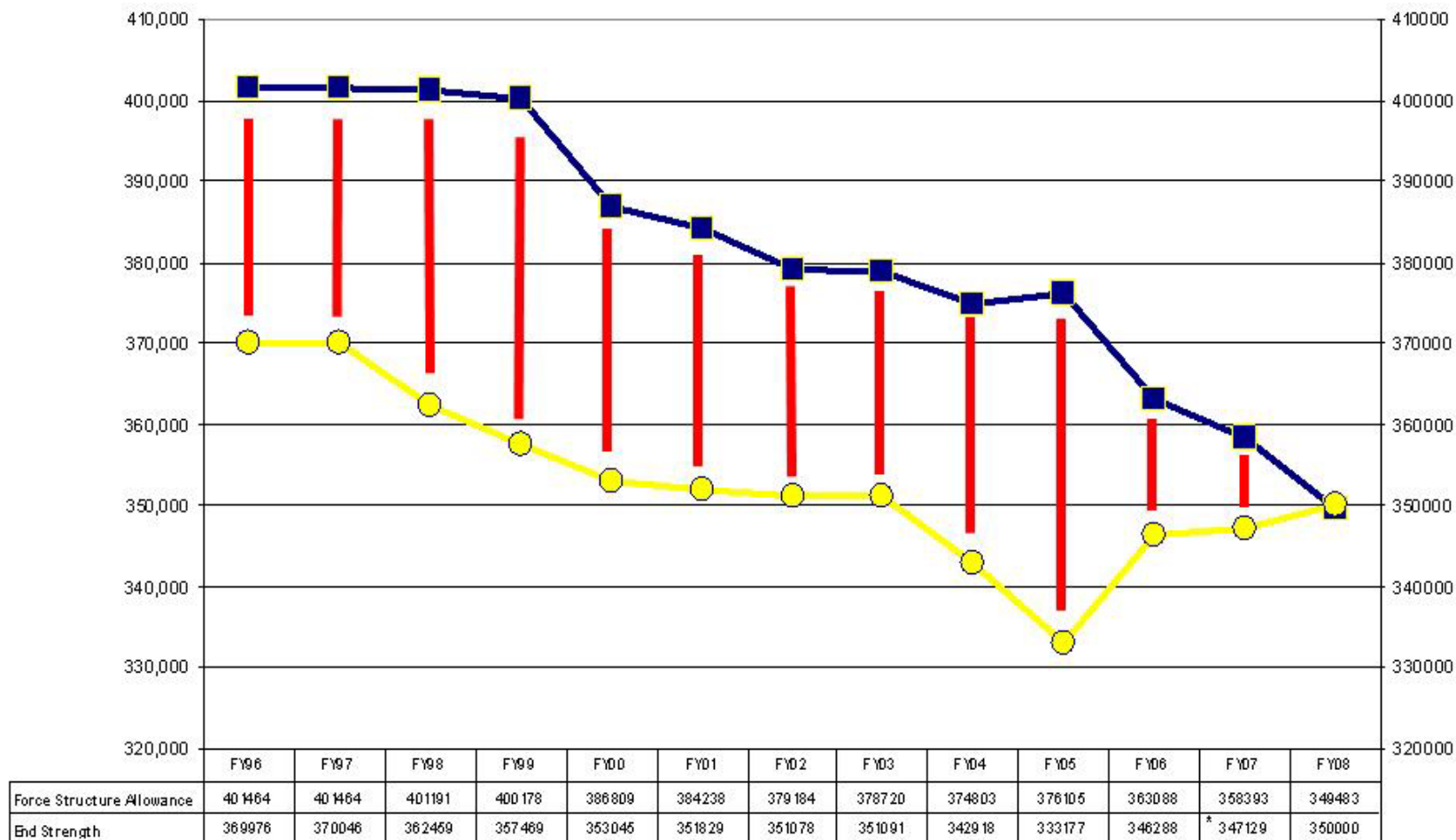
Strong

Organized





ARNG ES and FSA FY96-FY08

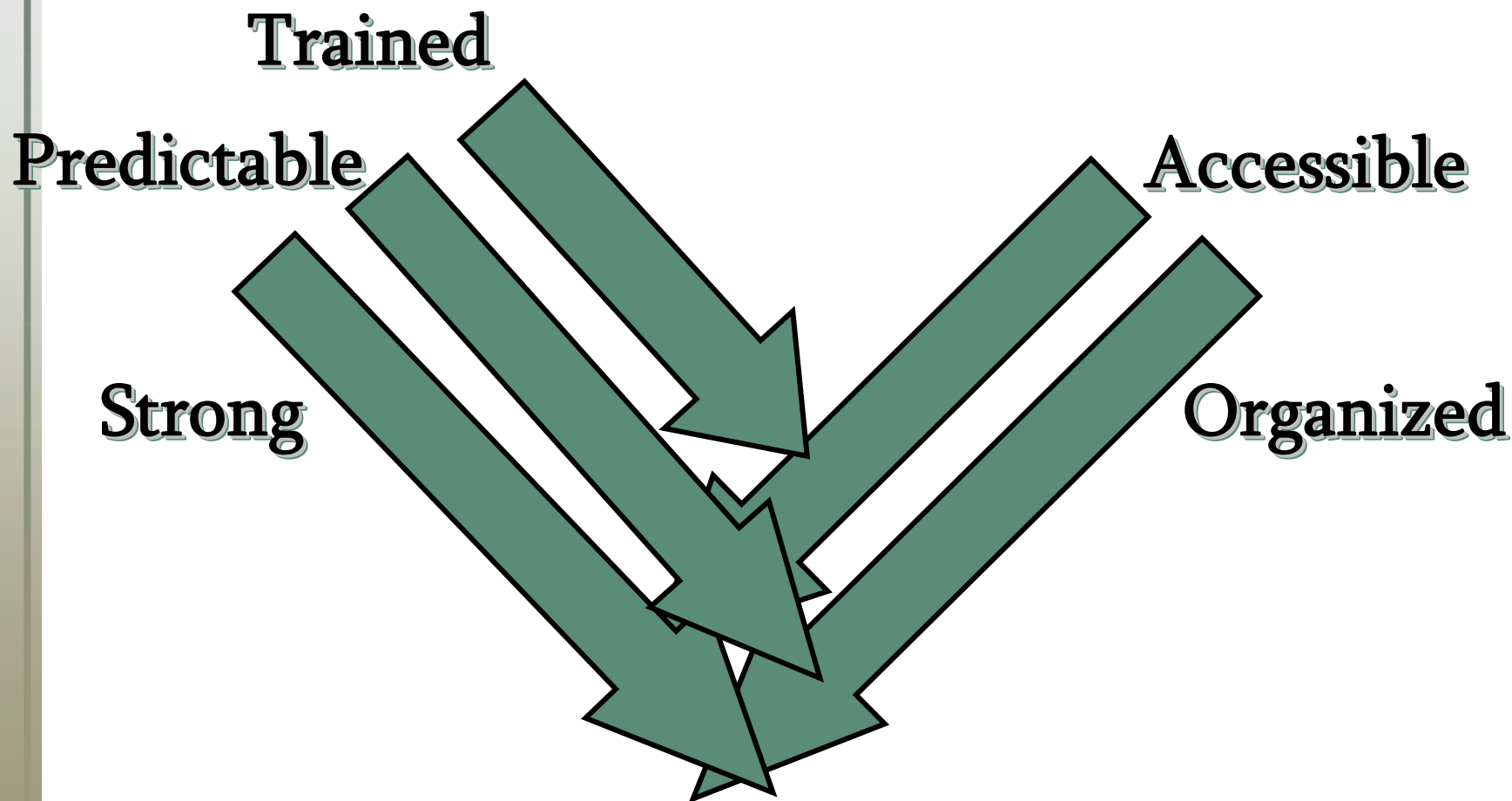


*ES AS OF 31 DEC 06

—■— Force Structure Allowance —●— End Strength



Resetting the ARNG for the Decade Ahead



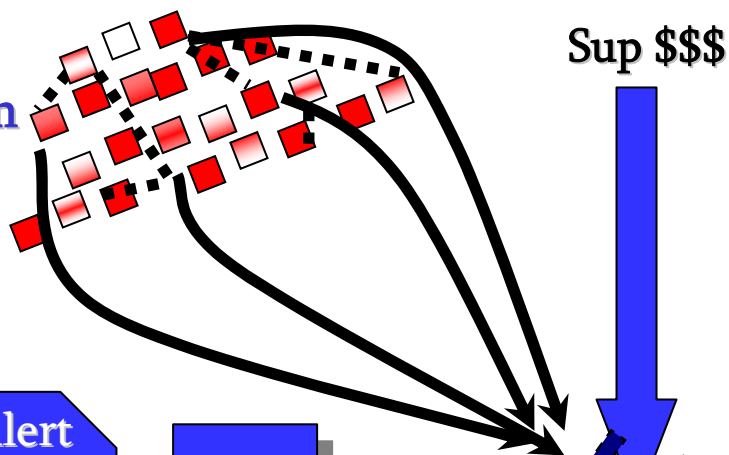


Cold War Era MOB Process

•C3 Resourced/ But Deploy C1

•Personnel
ALO'd Down

•FS/ES
Imbalance



39 days
during
year

NO

VALIDATION

6months

3months

**MOB
Date**

Post-MOB Tasks e.g. BCT:

SRP - 4

PMI IWQ/CSWQ/WTT - 8

Maint TI Garrison - 2

CPX TOC OPS-TOCS in field - 8

SQD PLT collective TNG - 16

Gunner Qual Ranges - 23

Specialty TNG Garrison - 16

TAC Mov't FTX/STX - 6

Urban Ops STX-FOB - 8

BN/BDE FTX-FOB - 8

MRE - 31



Cold War Era MOB Process

Take Risk Pre-MOB

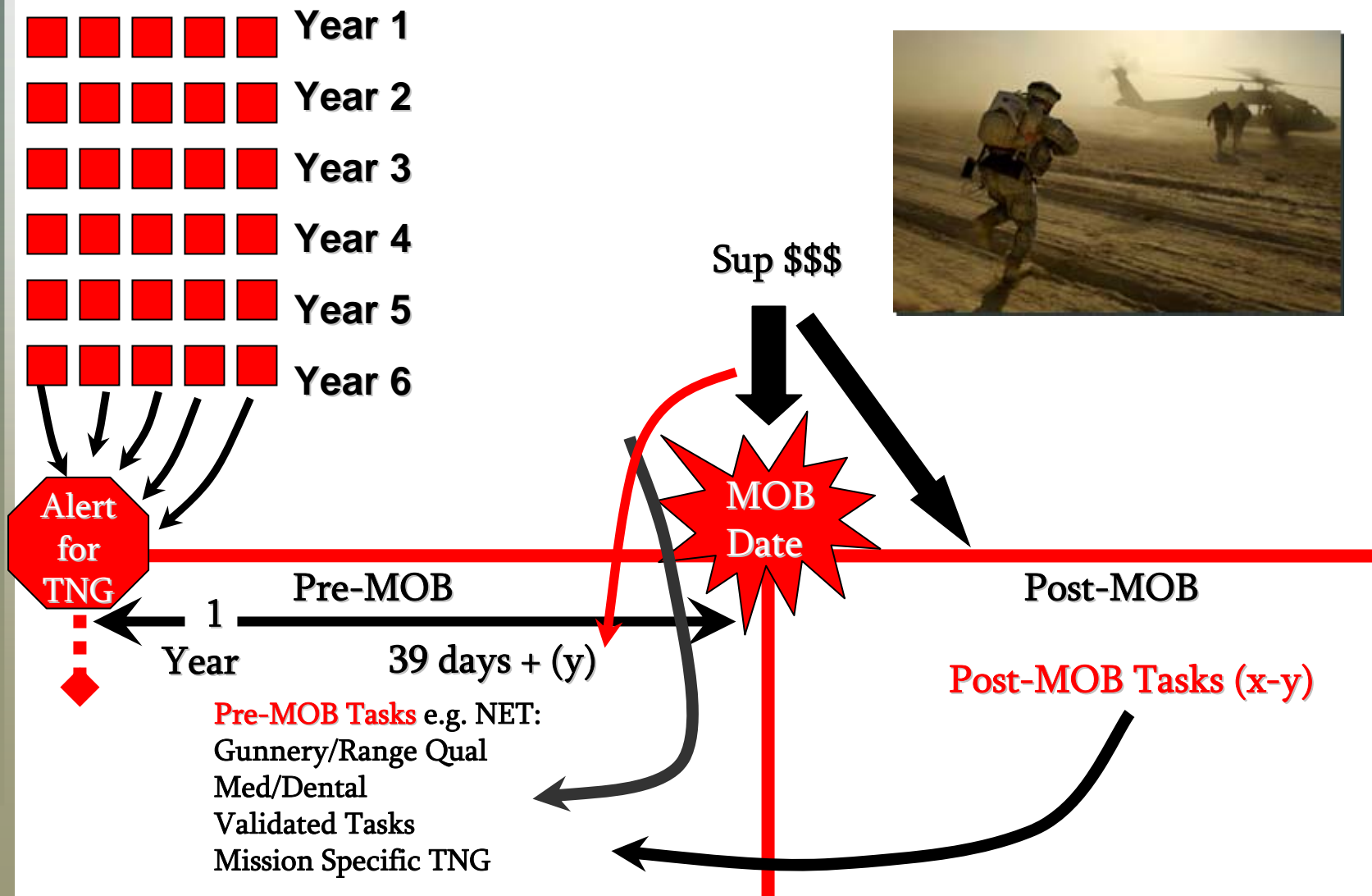
- Come as you are to MOB Station
- Fill to Warfight levels thru Army Sourcing
- Long Post MOB Training Cycle
- One Time Deployment (24m consecutive)

Reality : Cross-leveling by other units

- No force pool
- Old Equip not deployed; NET at MOB station
- 24m cumulative
- Same ratio – 1 deployment : 24m
- Campaign generates requirement for > one deployment
- **18m is too much if Soldiers expected to do multiple rotations**

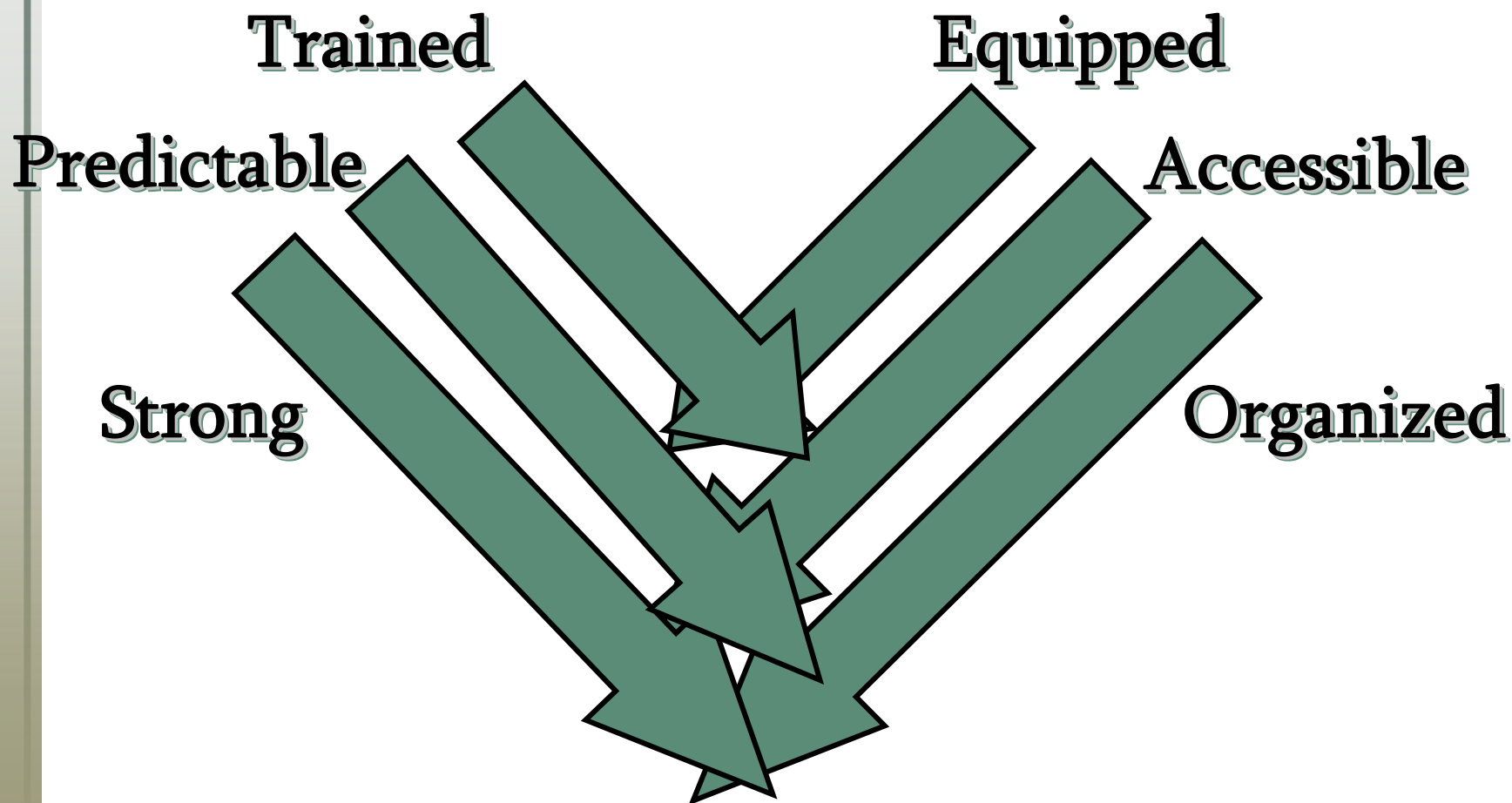


Operational Reserve MOB Process





Resetting the ARNG for the Decade Ahead





ARNG Tactical Vehicle Fleet

- A critical enabler in deployed and domestic missions, plus training
- Existing shortages hinder training and readiness
- Obsolescence detracts from capabilities
- Procurement and fielding of modern TWV to ARNG units must be accelerated





Dynamic Requirements and EOH



Redeploying Units

Units in Combat Zone



Southwest Border Security



FMR

TAA

Modularity

State
Emerg

ARFORGEN

Units Building Readiness

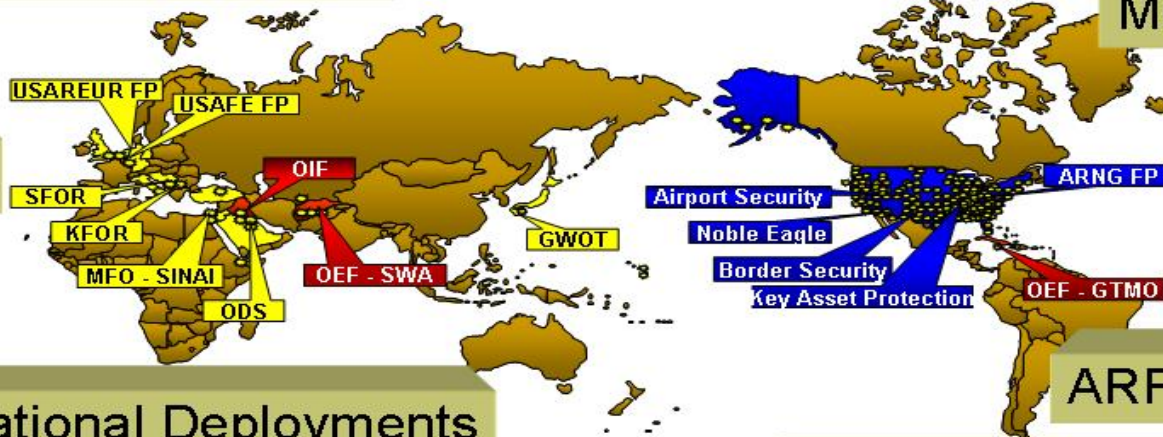
Units in Pre Deployment Cycle

QDR



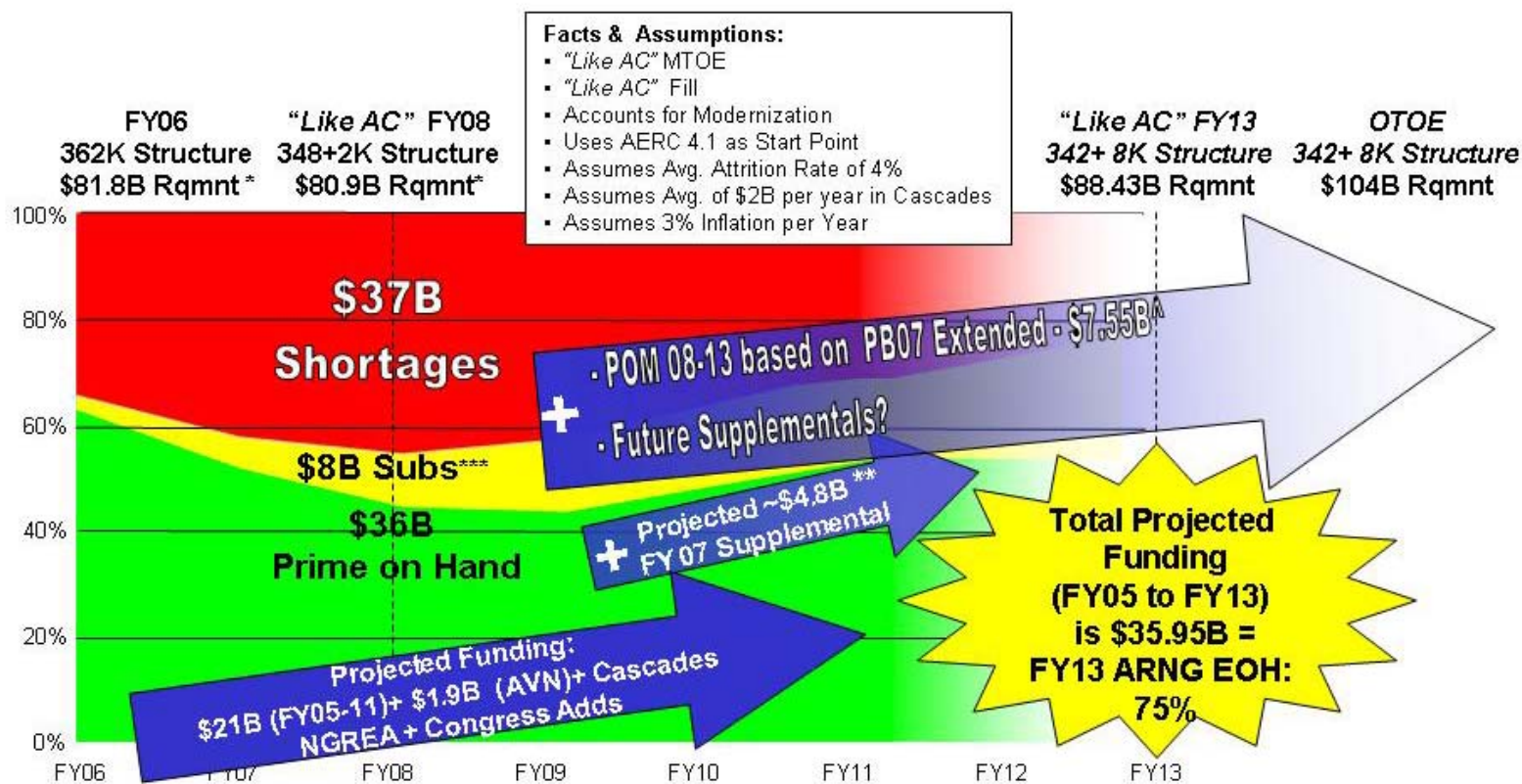
Operational Deployments

Defense Support to
Civil Authorities (DSCA)





ARNG Equipping Requirements Over Time



* Total ARNG Equip in \$ including SBE + RESET + Deployed

** 2.17B received in FY07

*** Substitute Items

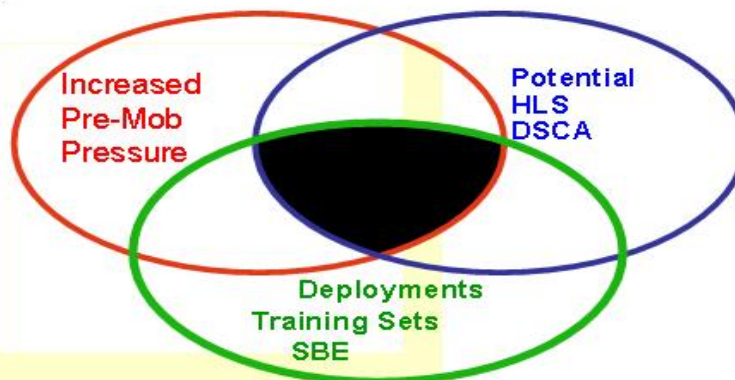


ARNG Shortfalls

Must Consider

- Tactical View
- Operational View
- Strategic View

- Identify Force Capability shortfalls –
 - based on Warfight analysis
 - based on Operational demands
 - based on HLD missions



CRITICAL SHORTAGES:

- UP-ARMORED HMMWVs
- 5 TON TRACTORS
 - 5 TON DUMP TRUCKS
 - 5 TON CARGOS
 - HEMTT LHS
 - FUEL TANKERS
 - TRAILERS





TWV Critical Issues

- Future funding requirements for all vehicles
- Critical shortages include:



FMTVs Vehicles: Plan is to Distribute new procurement and cascade of M900s to retire M35s first

- New LMTVs replace M35s
- New MTVs replace M900 Series
- Displaced M900 vehicles trickledown and replace M35s

HMMWV's: Major shortages impacting Pre-MOB or Post-MOB Training, HLS Missions, and Deployments. New Procurement and Recapitalization Supporting Readiness Improvements

HEMTT LHS: Convert Cargo's to LHS

PLS Trucks and Trailers: Overall Shortages



EQUIPPING REQUIREMENTS

SBE/TPE
APS-5
Combat Losses
Reset / Reconstitution / Recap
Modularity
Operational Needs Statements
Mission Essential Equipment List
Training Sets

**Competitors
For Equip**





FY08 Shortfall List

FISCAL YEAR 2008 APPROVED ARNG 1 - 25 EQUIPMENT MODERNIZATION SHORTFALLS

HMMWV

Tactical Trailers
(M872A4)

M916A3 LET / M870A3
(*Light Equipment Transporter / Trailer*)

M917A2 (20-Ton Dump Truck)

All Terrain Crane (ATEC)

M9 ACE SLEP

**Route and Area
Clearance Systems**
(*GSTAMIDS, IVMMD*)

Horiz Const Systems
(*EMMs, Asphalt Mixing Plant,
Asphalt Paving Machine, 250
CFM Compressor*)

FMTV

Communication Systems
(*JNN, HF Radios, SINCGARS*)

ABCS (Suite of Systems)

Digital Enablers
(*STAMIS, CAISI, VSAT*)

Movement Tracking System

Night Vision
(*Thermal Weapons Sights,
Driver's Vision Enhancer*)

**Tactical Water Purification
System**

Tactical Quiet Generators

Small Arms
(*M4, M240B, M249, MK-19*)

HTV

(*HEMTT / LHS / PLS*)

Aviation Systems
(*CH-47F*)

UAV Systems
(*Shadow, Raven*)

Precision Strike
(*M777A1 Howitzer, LW155
M119A2 Howitzer, 105mm*)

Profiler

LLDR/FS3

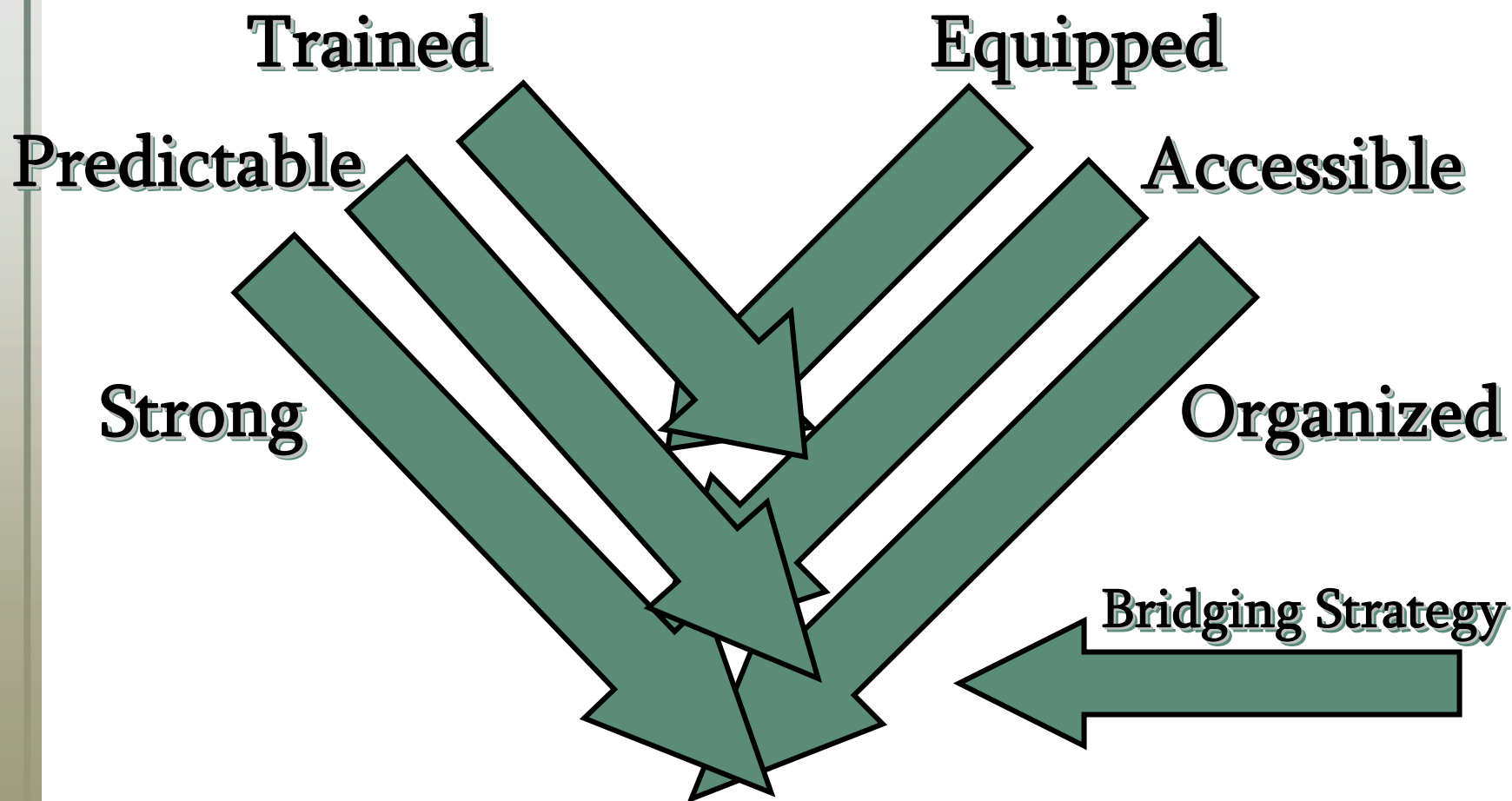
GLPS

Chemical
(*Alarm/Detectors, JSTDS-SS,
CBPS Shelters*)

NOTE; NOT SHOWN IN A PRIORITY SEQUENCE

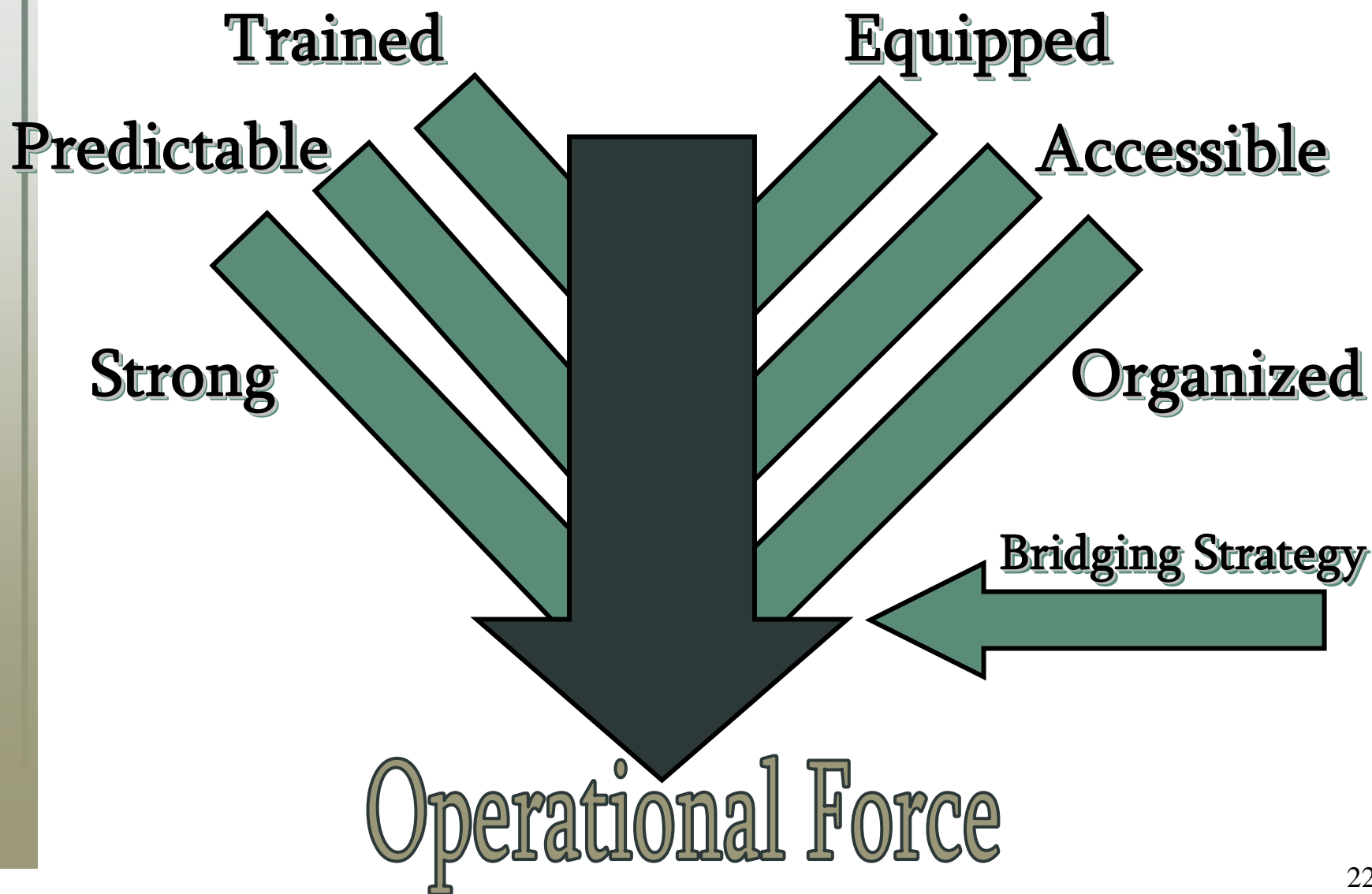


Resetting the ARNG for the Decade Ahead





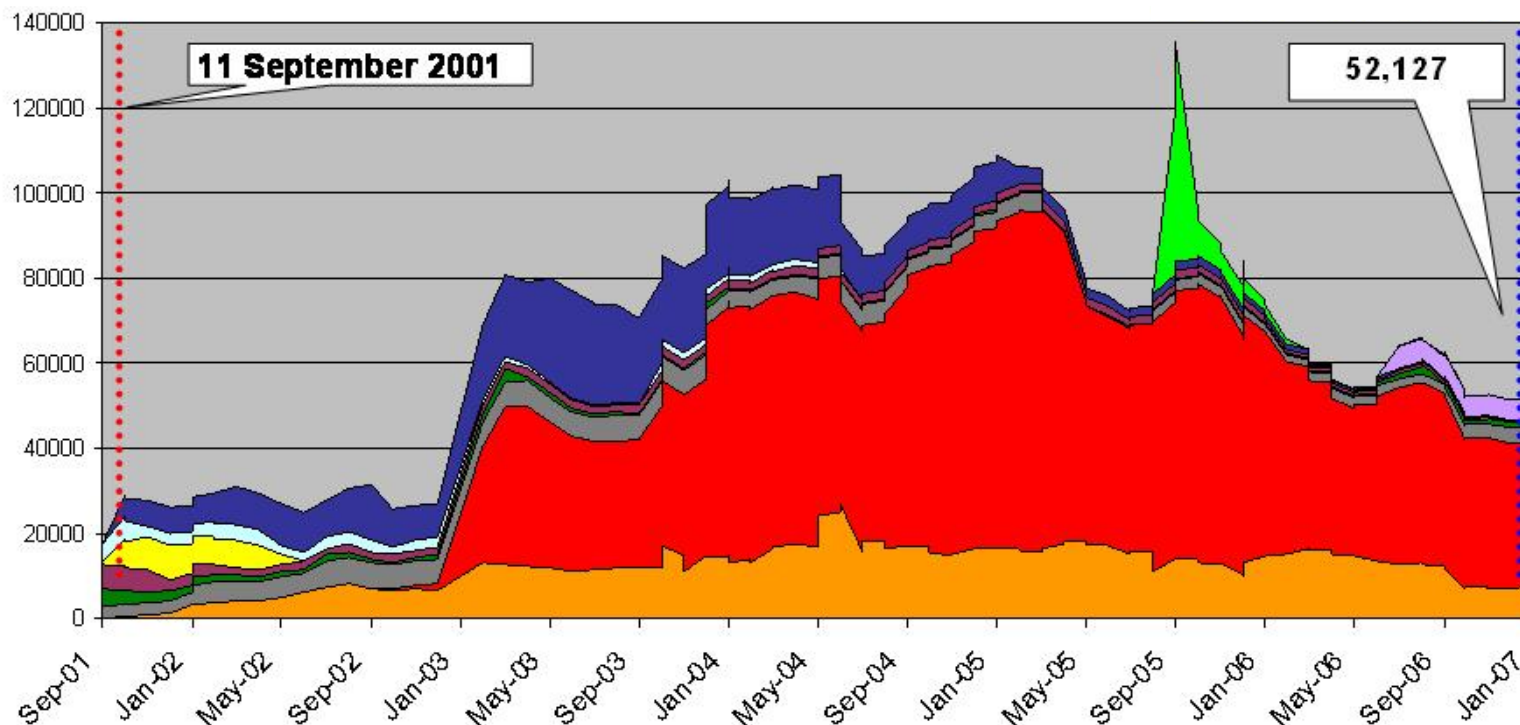
Resetting the ARNG for the Decade Ahead





State of the ARNG Since 9/11

Level of Activity

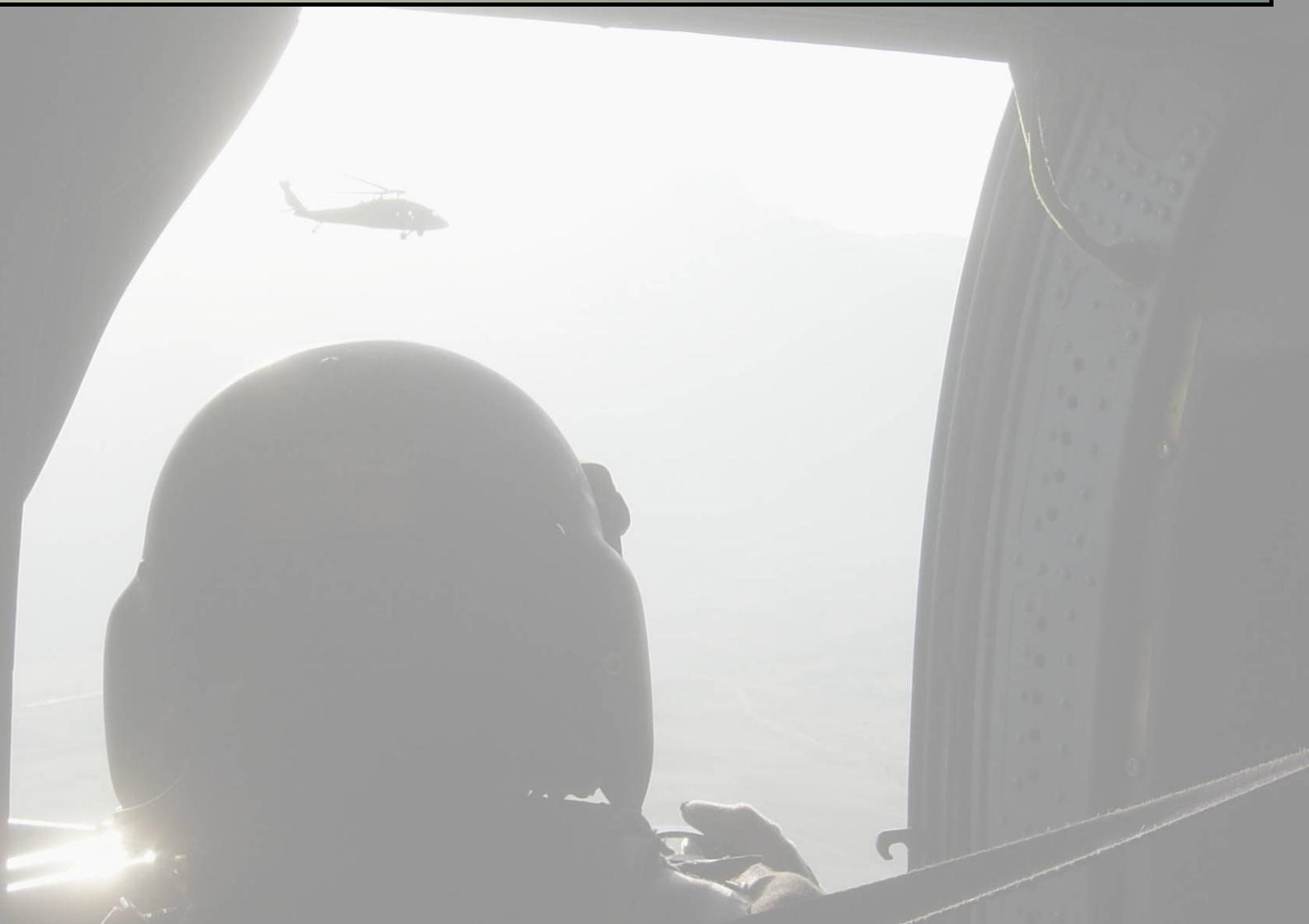


Total Soldiers on a mission as of 1 February 2007

■ Iraqi Freedom	32,733	■ Force Protection	5
■ Enduring Freedom	8,033	■ State Active Duty	1,553
■ Operation Noble Eagle	395	■ Airport Security	0
■ Presidential Res. Call Up	0	■ Operation Jump Start	5,386
■ Balkans / MFO	4,022	■ Hurricane Support	0



Questions?



For 370 Years – Strong and of Good Courage